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PENNSYLVANIA ANGLER



YELLOW PERCH SPAWNING

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VOL. 3
NO. 1

OFFICIAL PUBLICATION
BOARD OF FISH COMMISSIONERS

JANUARY
1934

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PENNSYLVANIA ANGLER

JANUARY, 1934
Vol. 3 No. 1

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EDITORIAL

"No Trespassing"

POSTED property on the fishing streams of Pennsylvania constitutes a problem for our anglers that unfortunately grows more acute each year. The tendency of landowners to close their property, often on the most desirable sections of a trout or bass stream is most unfortunate, and too frequently is caused by thoughtlessness on the part of a fisherman. Of course, there is another side, the fact that occasionally a property owner selfishly determines to keep the fishing for himself, regardless of the distribution of fish by the Fish Commission to other sections of the stream. Apparently, the only logical solution to this problem is whole-hearted cooperation between our fishermen and the owners on whose property they find their sport. This objective may be attained by following the rules of good sportsmanship.

To my knowledge, the finest example of sportsmanship in this respect is that set by Elmer E. Shaner, of Slippery Rock, beloved by those who follow the clay pigeon sports as "the grand old man of trap shooting." Realizing the vital importance of cooperation between sportsmen and landowners, Mr. Shaner several years ago, when he moved from Pittsburgh to his home at Crestview, Butler County, determined to try a plan that has been eminently successful.

Prior to his arrival in Butler County, the 400 acre farm on which he now lives had been posted, as was practically every other farm in the township. Basing his action on the theory that the sportsmen would not violate the rights offered them, he immediately removed the "No Trespass" signs, replacing

them with the sign accompanying his photograph on this page. As a result of his courtesy and appeal to the sportsmanship of fishermen and hunters, the dean of American trapshooters has never had the privileges and courtesies offered subjected to abuse.

A novel feature of the sign was the invitation to dinner. Mr. Shaner found that while some sportsmen accepted the invitation, more of them dropped in for a chat, and always found a warm welcome awaiting them. The message on the sign, "Hunters and Fishermen, Welcome, But Please Respect the Owner's Rights. Kindly Do Not Injure Stock, Nor Damage Property. When The Bell Rings, Come to the House and Have Dinner"—inculcates the very principles of true sportsmanship. In brief, here is the code of meeting the other fellow more than half-way, of "playing the game" according to the finest rules that govern it. Only a cad would take advantage of such splendid hospitality. I believe that could we broadcast to the home of every farmer and every sportsman in Pennsylvania the code of sportsmanship exemplified by Elmer Shaner, we should go a long way in solving the vexing problem of posted lands.

Summing up on the subject of "No Trespass" signs, it is largely a matter of "give and take." Granted that a small minority of sportsmen fail to consider the rights of the landowner, and that some landowners are selfishly inclined to close their property regardless of whether the rights they offer are abused or not, the vast majority of those interested in conservation are opposed to "No Trespass" signs. A worthwhile objective could be attained if every year, through the efforts of sportsmen and landowners to cooperate, the number of signs posting lands would decrease. Our fishing waters in Pennsylvania, curtailed as they are by the ever present menace of pollution, must not be further restricted in area by closing good streams to the fishermen through posting.

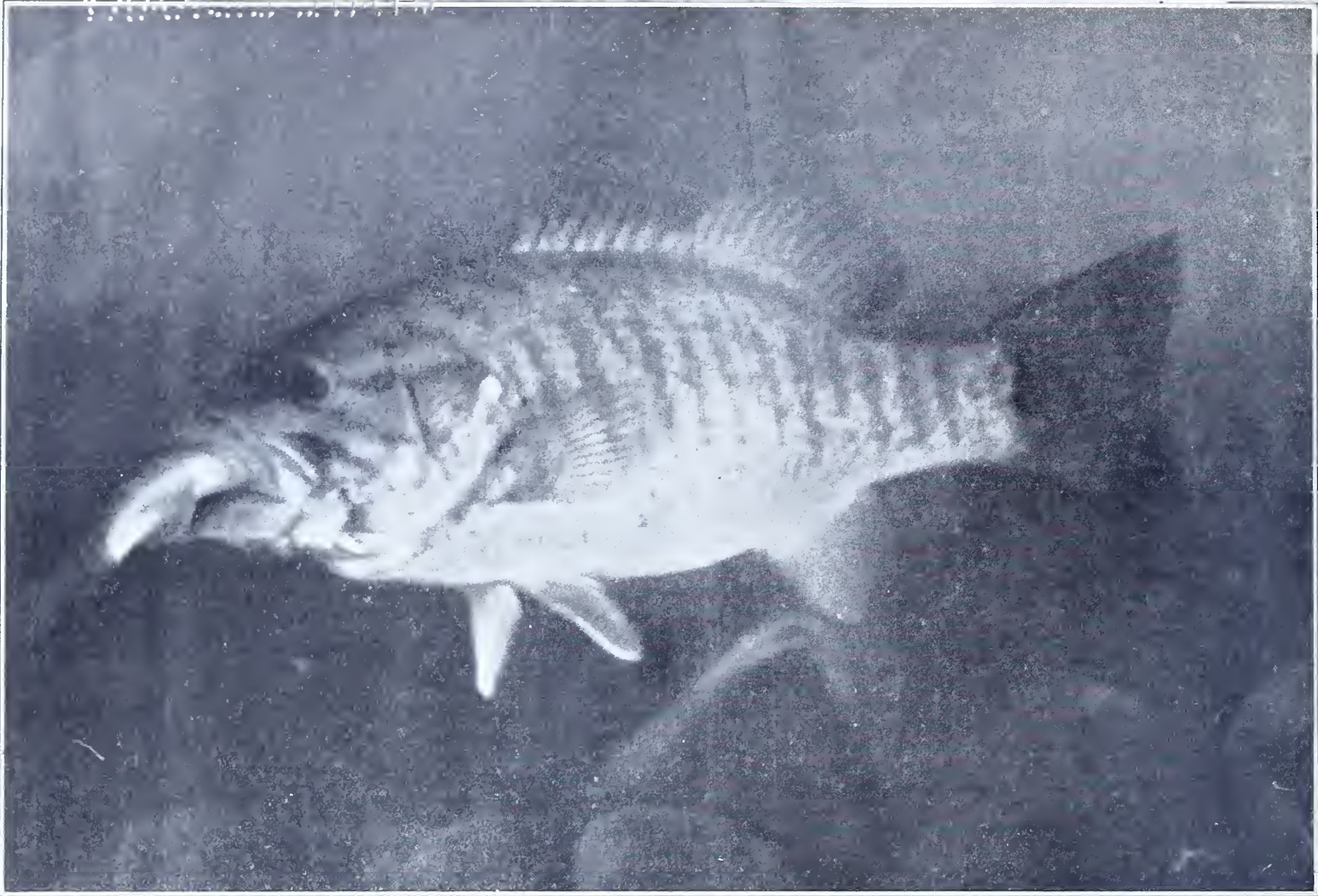
This year should be a banner one for the fishermen of the Commonwealth. Our hatchery distribution not only has produced a vast number of legal size trout for distribution, but other varieties of fish have been stocked heavily under favorable water conditions. It should not be marred by the problem of posted lands.

Another angle to consider insofar as land posting is concerned regards distribution. With the great fish producing plants owned by our licensed anglers turning out millions of fish of the various species annually, the thought should be kept in mind that they may be most effectively planted if stocked over the widest possible range. When land is closed to the public, the Fish Commission of course will not stock it, for these fish have been raised with money contributed by the fishermen to improve their sport. Often such water areas are ideal for trout and other fish, and would benefit far more through stocking each year than they could possibly benefit even if fishing is not permitted and in consequence they are not stocked. Any strain of trout is improved by infusion of new blood, just as a strain of livestock is bettered by this method. Small streams, entirely closed by clubs or individuals, unless they are stocked privately at considerable expense, cannot benefit from this infusion of strong healthy trout.

This is but one of many angles to consider in the menace to fishermen through posted lands.

For better fishing, "No Trespass" signs should come down.

Commissioner of Fisheries



A SMALLMOUTH BASS DEVOURS ITS YOUNG

Game Fish Cannibals of

THE game fishes of Pennsylvania—black bass, pickerel, wall-eyed pike, and trout—are killers by instinct. Swift in pursuit of their prey, endowed by nature with strong bodies and mangling jaws, they live by taking toll from other forms of life in the inland waters. Without exception, they are cannibals, drawing no line of preference between a minnow or a smaller member of their own species. There is an eternal warfare in the water world of streams and lakes, governed by the code of survival of the fittest in its most relentless form. The very tendencies that mark them as game fish to the angler, their savagery in striking and strong desperate lunges to break away from the hook, are characteristics that dictate their code “to live is to destroy.” During the cycle of existence, from the time one of these splendid game fishes has absorbed the yolk sac until its death, it is an agency of destruction to creatures in its range.

In no form of animal life is the code of survival of the fittest more vividly illustrated. Darwin advanced the theory that the various kinds of plant and animal life

living in a state of nature are perpetuated and improved by survival of the strongest, whereby the deformed or weak of a species are crowded out and destroyed. The intensity of this struggle for existence varies according to the amount of forage and forage area available. Where an area is somewhat restricted, the food supply scarce, and game fish crowded together, the weaker of all species are ruthlessly destroyed, usually to perpetuate a strain of large bass, pickerel or wall-eyed pike. Brook and brown trout, while they destroy other species in their range, are not equipped as are warm water game fishes for combat. Lacking the heavier scales of armor and spiny rays of the bass, for instance, the trout is not adapted to meeting competition so keen as that in lakes, streams and ponds. It is in the warmer waters that nature has chosen the great battleground for the fishes. This does not mean that trout hesitate to feed upon others of their kind. In their somewhat limited range, larger trout are frequently confirmed cannibals, particularly if food is not plentiful.

Black bass, pickerel, wall-eyed pike and

trout are swayed by two instincts in practicing cannibalism—an almost insatiable hunger for live, moving food, and an inherent lust to kill. Cannibalism not only ranks as a major menace to these game fishes in wild water, but is a serious handicap to raising them in limited hatchery areas.

The Bass—“A Natural Cannibal”

Of the popular game fishes, smallmouth bass and largemouth bass are ruthless cannibals. Voracious by instinct, they do not hesitate when hungry to dart into a sheltered cove harboring young bass, devouring as many as they may capture. Only during a brief period in its feeding season will a male bass refrain from killing the young. While guarding the nest of eggs and fry, an interval of from two to four weeks, the male is faithful to its trust, driving away any intruder and feeding sparingly. This lapse in food-taking, however, is but a temporary truce in its killer lust. Finding members of the same brood that it has fathered a week after leaving the nest, the male parent will devour them as readily as it will minnows or other forage fishes. Cannibal-

ism of bass, however, is dependent to a certain degree on the available supply of other forage. In a small water area with a limited supply of forage fishes, the slaughter of young bass is high. It follows that in waters having both an abundance of other forage and sufficient range, the toll taken upon bass fingerlings by the adults is less severe.

Under conditions prevailing at the hatcheries, the lust of bass to kill may be more closely studied than is the case in wild waters. The voracity of bass in feeding at the hatcheries leads to a belief that they are cannibals by nature. Faster growing youngsters will kill and swallow smaller members of their species. This tendency to cannibalism makes necessary frequent sortings during the period of their growth to stocking size.

The eagerness with which adult bass destroy their young is clearly illustrated when the parent bass are removed from the ponds in which they have been spawning and caring for the fry. Frequently at the hatcheries, when being moved, parent bass will disgorge several ounces of young fish that they have devoured. The killing instinct is inherited by the fingerlings to a marked degree, and at an early stage certain individuals revert to cannibalism. In almost every group of young bass retained in the ponds this cannibalistic tendency so strongly marks the fingerlings that one will persist in taking its fellows for food, refusing minnows and other forage offered. Nourished as it is on the rich flesh of other bass fingerlings, this tiny cannibal grows rapidly into an exceptionally husky specimen. As it develops, the craving for others of its kind apparently increases, and unless it is removed from the pond, the toll it takes from its fellows will



WALL-EYED PIKE OR PIKE-PERCH

represent a serious loss among the other young fish. In other words, its growth through cannibalism makes it a highly expensive fish to raise.

So much for the black bass, a natural cannibal.

The Wall-Eyed Pike

In greed and cannibalistic tendencies, the wall-eyed pike, Susquehanna salmon or pike-perch equal their rivals for the live food supply of the inland waters, the black bass. It is a known fact that a pike will

consume food equal to its own weight in a single day.

This voracity is displayed by young pike when they are still tiny specks in the water. Lacking other food, the baby pike-perch displays an amazing lust to kill. Confined in hatchery tanks, these almost transparent youngsters strike eagerly at the tails of their fellows and attempt to devour the other fish. Of course, to swallow each other entirely at this stage of life is impossible, as they are comparatively of the same size. However, when this killing lust subsides, it is not unusual at the hatcheries to see strings of the young pike linked together, these strings often attaining a length of one inch or more.

Nature has endowed the wall-eyed pike with the attributes of the game fish killer. In shape it is long and spindle-shaped. Its rough scales serve as an ideal armour for combat with other fishes, while its jaws are armed with sharp, needle-pointed teeth. In pursuing its prey it is swift and aggressive and ideally adapted to a life of pillage and destruction. Mottled in coloration, it blends well with the surroundings of streams and lakes in which it is an outstanding game fish.

"Wolves of the Inland Waters"—Pickerel

For sheer aggressiveness and the greed with which it devours others of its kind, the eastern chain pickerel, a native to Pennsylvania waters when the Indian relied upon them for food, is second to no other game fish in its range. Here is the lurking type of killer, a fish that by preference lies concealed in the weed beds until its victim passes within striking range. Its rush for prey is almost like the swift flight of an arrow. Long, duck-bill shaped jaws, armed with piercing teeth, a slender shape and soft fins that propel it through the water at amazing speed characterize this fish that has earned the surname "wolf of the fresh water." In killing lust it bows to no other

(Continued on Page 10)

the Inland Waters



THE PICKEREL

Death of Hon. Mathew A. Riley a Loss to Conservation



In the death of Hon. Mathew A. Riley, of Ellwood City, veteran member of the Board of Fish Commissioners, fish conservation in Pennsylvania sustained a deep loss. Devoted to the cause of better fishing, Mr. Riley endeared himself to all who knew him as one who placed the needs of the great cause he served above every other consideration. In the moulding of the program of the Board he had a prominent role, and was an outstanding opponent to pollution of fishing waters.

Mr. Riley was appointed to the Board of Fish Commissioners on October 4, 1921, by the late Governor Sproul. On March 20, 1924, he was reappointed for a six-year term by Governor Pinchot and served in the capacity of Board member until his death.

A splendid and touching tribute to Mr. Riley was recently expressed by John G. Mock, Outdoor Editor for the *Pittsburgh Press*. A warm personal friend of Mr. Riley, his tribute is a fitting memorial to the veteran member of the Board.

"Gone down the trail that knows no return. It is with grief-stricken heart that we acquaint our readers with the passing of Mathew A. Riley of Ellwood City," wrote Mr. Mock.

"At 9 o'clock last Sunday morning, Mr. Riley heeded the call of the Great Fisherman and passed on, a martyr to conservation. It was while accompanying his fellow members of the Board of Fish Commissioners on a tour of inspection at the Spring Creek Hatchery and stream improvement project that he contracted the first stages of the illness which was to end an active, colorful and noteworthy career.

"Mr. Riley was considered one of the most valued members of the Fish Commission and he gave unstintingly of his time. He was an engineer and headed all committees of the Board on engineering problems at hatcheries. In 1925 he was appointed chairman of a committee to make a study of available hatchery sites in Pennsylvania. The Board desired to formulate a program over a period of 10 years, which would eventually create 10 major hatcheries. He took an unusual interest in this work and submitted a detailed report which covered the entire Commonwealth and it was principally due to his recommendations that the hatchery was established at Tionesta, one of the major hatcheries in Western Pennsylvania.

"He was an ardent and faithful worker in the cause of conservation, the pollution of waters receiving his especial attention, tendering his influence and support to all legislation which would tend to abolish the contamination of our streams. The protection of fish and game received his full attention at every session of the legislative body.

"His going cannot but leave a great void, not only in his own community, but throughout the entire state, for Matt, as he was intimately known, was a man of commanding intellect, rare judgment and resourcefulness, possessing qualities of keen humor and loving kindness, which endeared him to thousands of friends in every section of the State."

ABANDONED DAMS MAKE GOOD FISHING SITES



A DESERTED DAM

Old dams, abandoned in many instances years ago, offer an ideal opportunity for increasing the fishing waters of Pennsylvania. Not only are water areas of this type good fishing sites, but boating, skating, and other forms of outdoor recreation are made possible through their formation.

Under the government's present civil works program, labor and sometimes material can be obtained for projects of this kind. Creating additional water areas in a community by building new dams or reconstructing abandoned ones is well worth while and has an additional advantage in the present program through putting men to work. Some communities, through this liberal offer, are building structures that will be costly to the taxpayer to maintain after completion. The first cost is the only cost involved in a substantially built pond and it will remain in the community for generations.

As an example of what can be done: In the borough of Philipsburg, Centre County, the sportsmen became interested in an abandoned dam within the borough limits that was filled in part by polluted water. Through the civil works, the polluted water was diverted around the pond in an open ditch, the rest of the pond repaired and a water area created covering approximately seventeen acres. The program was completed before the fall distribution of fish and it was liberally stocked with suitable species by the Fish Commission.

In Columbus, Warren County, on the Brokenstraw Creek, another abandoned dam is being repaired. The work is now under way, through the Civil Works Program, to restore this recreational center. When complete it will back water for about two miles. This same agency is being used to increase the flowage area of Kepharts Dam on the Little Moshannon Creek in the Moshannon District of the State Forest. The Kepharts Dam project is needed as this section of the state has few large dams. As it is within the State Forest District, it will always remain open for the enjoyment of sportsmen.

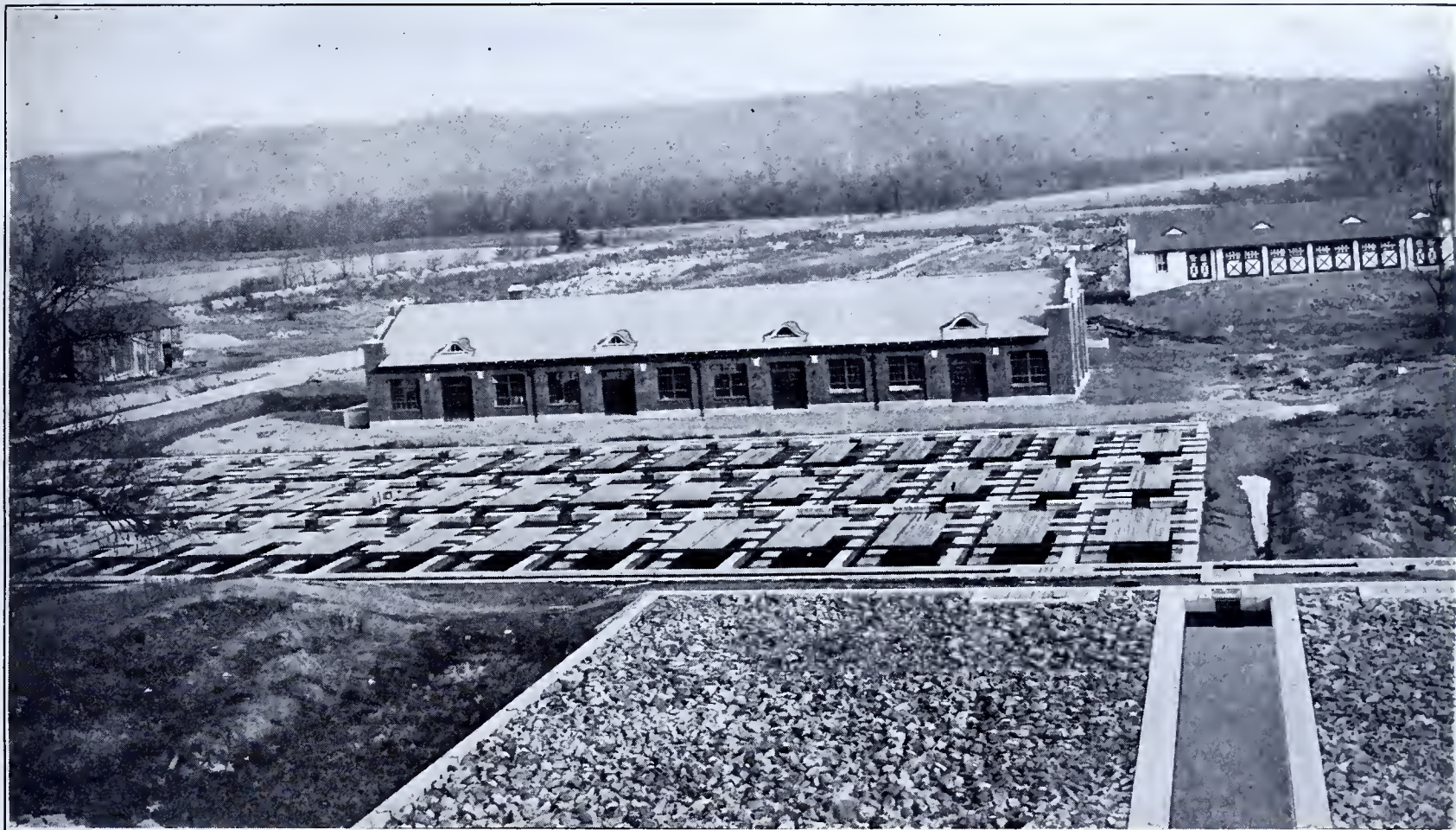
Fish Exhibit

A fine display of mounted brook and brown trout, bass and pickerel was a feature in the wild life exhibit staked at the West End Fair, near Gilberts, Monroe County, by the Monroe-Pike Sportsmen's Association, according to H. P. Custard, chairman of the Fish Committee of the Association.

The display attracted a great deal of attention from visitors attending the fair and served to promote keen interest in conservation.

Fish Commission Will Stock Fingerling Trout in 1934

Present Program Continued



REYNOLDSDALE HATCHERY, BEDFORD COUNTY, ONE OF THE MAJOR TROUT PRODUCING HATCHERIES, WILL BE AN IMPORTANT FACTOR IN THE FINGERLING DISTRIBUTION

IN ADDITION to planting trout of six-inch size and over to Pennsylvania trout waters, the Fish Commission this year will adopt a system for the stocking of nursery streams with fingerling trout, Oliver M. Deibler, Commissioner of Fisheries, has announced. This program of stocking fingerling fish will be based upon the number of legal size trout allotted to each county and is an auxiliary system of distribution in which the sportsmen of each county will play important roles. It will not in any way curtail the present production of legal size trout, but should prove a valuable asset to small tributary trout waters not now on approved stocking list.

While minor details of the program have not been worked out as yet, the sportsmen will be key figures in carrying it to a successful conclusion. Fishermen who have taken an active part in conservation activities in the various counties will deliver the fish to streams on public lands that have not been too dangerously affected by drought in recent years. The fingerlings, released in suitable feeder streams to main trout waters should be of valuable assistance in improving fishing in the main streams. Dropping down from the smaller areas in which they

have been planted as they increase in size, the smaller fish offer a fine possibility for improvement of heavily-fished waters through natural restocking.

Changes in natural conditions during the last sixty years have been largely responsible for the present effective system of stocking trout of legal six-inch size and over. In 1873, when the Fish Commission was first organized, our mountain lands, and in many instances, the valleys through which trout waters passed, were timbered with virgin forests. These great natural reservoirs served to retain trout waters at suitable levels for more effective stocking of brook trout fry, that is, trout at the stage immediately following absorption of the yolk sac. Then came the sawmill, and destruction of virtually all the great forests of virgin timber.

The effect of lumbering operations soon was apparent. Sportsmen in various sections of the state saw that trout were rapidly disappearing from many of Pennsylvania's streams. In planting fry, a method through which the loss is extremely high, those interested carried through the program largely because methods for retaining the fish until they grew to larger size

had not yet been found. They also believed that the spring tributaries existing at the time would support the trout fry in a suitable manner. Prior to the lumbering age, stocking with fry undoubtedly did better fishing.

Wasteful destruction of Pennsylvania's forests resulted in the virtual disappearance of natural nursery homes for the baby trout. No longer controlled by the vast natural sponge of forest lands that released water gradually, freshets swept the trout streams, carrying away eggs or baby fish, and in many instances covering the stream beds with silt. Many streams became unfit even for larger trout.

Realizing that the lumbering era marked a virtual end to successful trout fry stocking, fish culturists of the period immediately following the log drives readjusted their hatcheries for a program of fingerling trout distribution. The fingerling program in Pennsylvania was carried on for a number of years, but each year stream conditions were apparently becoming worse, and those in charge of the work foresaw that through stocking fingerling trout they could not meet the growing demand upon our waters by fishermen.

Again the hatchery program was reorgan-

ized, this time the building of the so-called fish hatchery being supplanted by giant fish farms, where, in addition to being hatched, the trout, could be grown to legal six-inch size and over before being stocked into our streams. This policy of stocking large trout has, without question, been the means of providing good fishing in Pennsylvania during the past decade. It has served to perpetuate this highest form of angling when, to all appearances, the trout fisherman's sport was on the verge of becoming a lost art. Many other states that formerly distributed fingerling trout have also turned to distribution of the larger fish.

But natural conditions have changed once more. A splendid stand of second growth timber now clothes the water-sheds of many of our trout streams and their tributaries. In 1930, a year when the drought was at its peak, the stream survey conducted by the Fish Commission revealed that the all-important spring-fed tributaries again were beginning to play their part. Fortunately for the fish conservation program, Pennsylvania's valuable second growth timber is annually becoming more effective as a vast natural reservoir.

Barring more severe droughts, many of the feeder streams to trout waters are now in a condition to support fingerling trout. Success of the program to stock fingerlings in addition to the larger fish will, of course, be dependent upon normal rainfall and snowfall that will serve in keeping smaller trout waters at suitable levels.

An exact program for distribution of these fingerling trout has not been worked out to the present time, although it is a known fact that the number of good nursery tributary streams is in direct proportion to the number of miles of larger trout streams in any given county. In the present stocking policy covering legal-size trout, each county is allotted a certain number of the trout available, six inches and over. This plan is based on the number of miles of larger trout streams available in the county plus the extent to which they are being fished. In all probability, the fingerling trout will also be allotted on a percentage basis computed from the number of legal-size fish now being distributed in each county. Local sportsmen will meet the trucks and transfer the fingerlings to smaller trout streams.

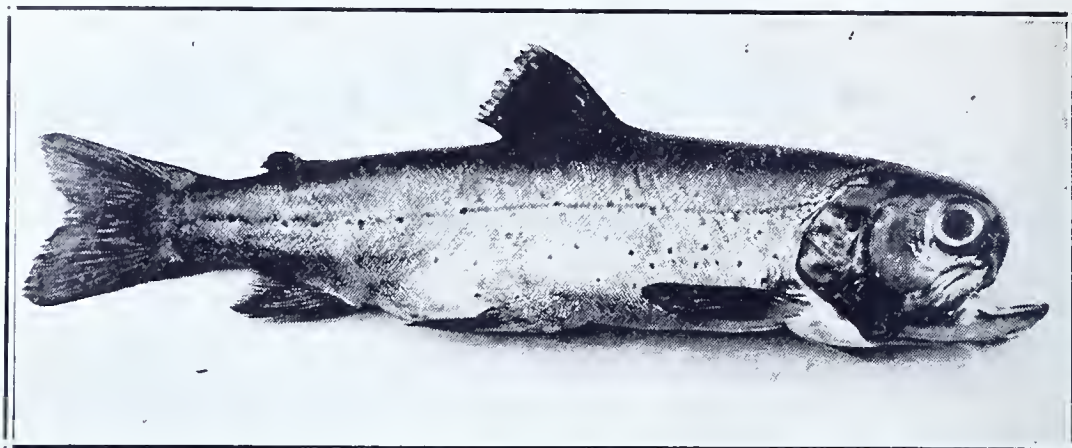
In working out a program for distribution of legal size trout, the Board endeavors to utilize larger waters if at all suitable. During the drought period, larger trout released in nursery streams too often fell prey to natural predators, and for this reason approximately 4,000 miles of these little tributaries were not stocked. Normal or near-normal flowage of water in these tributaries this year offers a real opportunity for improving fishing by stocking them with fingerling trout.

MUSKIES LOOM AS MENACE TO FISH IN THEIR RANGE

Of the game fishes of Pennsylvania, the muskellunge deservedly holds the distinction of being classed "big game." It is a fighting fish of great magnitude and in waters to which it is native, excels in girth and length any other species of game fish.

Recently, the ANGLER has featured catches of these big fish in its columns, with the

JOHNSONBURG ANGLER CATCHES TROUT LACKING UPPER JAW



Freak fish, some of them lacking a tail fin, others deformed often through injuries, are sometimes taken in Pennsylvania waters. Perhaps the most unusual fish of this type ever reported to the Fish Commission was that taken by Frank L. Bressler of Johnsonburg, an ardent fly fisherman.

In a recent letter to Commissioner Deibler, Mr. Bressler tells of his unusual catch. The freak brown trout illustrated in the cut accompanying this article was caught in 1923, and it required careful playing to land it on a No. 10 fly. The fly in question was a Parkes Heath moth fly.

On several occasions prior to landing the freak trout, Mr. Bressler had hooked it, but each time it succeeded in breaking away, apparently with remarkable ease. Finally, it was taken, and the fly was found to be embedded in the lower jaw. The upper jaw was almost entirely lacking.

thought that news of the muskie catches would prove interesting to Pennsylvania fishermen. However, numerous requests have followed these articles from anglers who desire to have muskellunge distributed to waters in their vicinity.

At the present time, officials of the Fish Commission are conducting an intensive study of conditions in fishing waters throughout the Commonwealth. Their findings have uncovered evidence that serious mistakes have been made in certain instances through planting of fish of foreign species in new waters. Indiscriminate planting of fish often upsets the vital "balance of nature" in fishing areas and the fishing suffers in consequence.

A well-grounded belief exists that a muskie weighing twenty-five pounds represents several tons of other fish that it has destroyed to attain that weight. This tremendous demand for food to sustain the giant fish takes high toll from forage areas in its range, not only of food fish but of game fish. It is a fortunate circumstance for the fisherman that the range of these "water tigers" is confined to a few lakes and streams in the Ohio watershed, to which they are native. Believing that introduction of muskellunge to other waters than their present habitat would result in a direct loss to anglers, the Fish Commission has rigidly opposed a policy of distribution to other waters.

Sportsmen who desire better fishing will greatly benefit not only their own sport, but also the sport of future generations by aiding in every possible way to retain the "balance of nature" as it was intended for our streams and lakes.

BURR HOOK RULING IN EFFECT THIS YEAR

Many inquiries have been made in reference to the use of the burr hook on plug bait. At the meeting held in February, 1933, a resolution was passed prohibiting the use of more

than one burr of three points, or three single hooks, on a plug bait. Articles were run in the press and in the ANGLER in reference to this ruling. At the meeting of the Board held in November, the matter was again taken up, and it was agreed that the Board would stand by its former resolution, and in addition to plug bait, the same regulation would apply to rod and line fishermen.

Notification has been sent to the Board of Game Commissioners, and the State Police who cooperate in the enforcement of the Fish Laws, asking that they do everything possible towards the enforcement of this resolution, which is supported by the Inland Water Code, providing for a penalty of \$20 if violated.

A number of other states have been enforcing laws similar to this ruling on burr hooks during recent years.

Finds Hibernating Bass

One of the strangest incidents reported to the Fish Commission, in fact, the first episode of the kind on record at the office of the Board, occurred recently on the Chillisquaque Creek, a favorite bass stream in Montour and Northumberland Counties. Two bass were found in a log that had been dragged from the creek to be used as firewood.

Lloyd Shook and his son, who had pulled the log from the stream were amazed to hear a splashing sound in the hollow portion of the watersoaked wood. Reaching into the cavity, Shook brought to view a black bass about 11 inches in length. He then repeated the performance, this time extricating a 10-inch bass. Both fish were in a semi-dormant condition when found.

Apparently the bass were all set for a sound winter's sleep before their hiding place was removed from the stream.

Selective Breeding of the Yellow Perch

By C. R. Buller

Deputy Commissioner of Fisheries

(PART I)

IN 1904, the construction of the Pleasant Mount Hatchery, located at Pleasant Mount, Wayne County, Pennsylvania, was undertaken. Within a radius of twenty to twenty-five miles of this hatchery are found numerous small glacial lakes, ranging in area from seventy-five to three hundred acres.

In most of these lakes are found the yellow perch. Its spawning season is in April or May, depending upon weather conditions. Spawning takes place along the shore lines in a depth of water ranging from a few inches to six or eight feet. At this season, owing to the melting of the snow and the spring rains, the lakes are usually several feet above their normal water level. Although the hatching period of the yellow perch is of but a few weeks' duration in many instances, the water recedes sufficiently during this period to leave millions of perch eggs on the shore to die for the want of water.

The superintendent of the Pleasant Mount Hatchery saw that if these eggs could be rescued before the water receded sufficiently to injure them, brought to the hatchery, hatched on the batteries, and the fry sent out for distribution, this tremendous loss could be turned into a gain. Each year, with this thought in view, men were detailed to do this work and hundreds of cans of fry were planted in the public waters each season.

The stocking of the public waters with yellow perch was looked upon with much favor by the sportsmen. First, because he is more generally fished for than almost any other species of Pennsylvania fish. He ranks among the best pan fish of Pennsylvania's spiny-rayed fish; he can be caught by the women and children, as well as by the sportsmen, at any time of the year with almost any kind of tackle. As one prominent fisherman put it a few days ago: "I fly fish for yellow perch in order to keep my casting arm in trim for bass and trout."

The keen interest taken in this work by the sportsmen led the culturists to exert every effort possible to improve the yellow perch fishing. From observation, it was learned that in many of the lakes, particularly the small lakes on which the so-called rescue work was being done, the yellow perch rarely exceeded six inches in



YELLOW PERCH EGGS

length and had lost many of their brilliant colors. At first, this was thought to be due to a lack of food, environmental conditions, or a superior number of voracious fish preying upon the yellow perch. However, this did not prove to be the case, as the same condition prevailed where the surroundings were ideal, both as to the food supply and as to places for reproduction. The hypothesis that voracious fish were destroying the perch also had to be eliminated, because the undersized perch were found in bodies of water inhabited only by the golden shiner, common bullhead, sunfish and yellow perch. It was then assumed that this small size must be due to inbreeding.

Many of these lakes were formed during the glacial period, and as far back as history goes telling us of the early fishing of Pennsylvania, the yellow perch was known. Unlike many other fish, the yellow perch is not much given to wandering from one body of water to another. Hence, it is obvious that the same strain of yellow perch has inhabited many of these lakes for generations without the infusion of new blood. We believe this inbreeding over such an extended period resulted in the decrease in the size and in the loss of the brilliant coloring. In animal breeding, science tells us that in not every instance will inbreeding result in the decrease in the size of the offspring, but

from our observations and experiments, we could find no other reason for this decrease in size.

Through the rescue work conducted at the Pleasant Mount Hatchery, infusions of new blood were being made in many of Pennsylvania's perch waters; but to build up a strain of large perch from small ancestors was uphill work. This was what Pennsylvania was endeavoring to do by stocking with the inferior strain of fish rescued from the surrounding lakes.

In 1911, a policy for the stocking of Pennsylvania's streams with larger sized trout was adopted, and increased efforts were made for rearing species of warm water fish, such as bass, catfish, blue-gill sunfish, yellow perch, etc. This necessitated the enlargement and reconstruction of all Pennsylvania's hatcheries. The Pleasant Mount Hatchery has been enlarged from a mere field station to a plant having available over four hundred acres of water for rearing purposes.

Shortly after the reconstruction of the hatcheries was undertaken, a strain of large sized perch was produced at the Pleasant Mount Hatchery by a series of selective breeding. As a foundation, yellow perch were chosen from bodies of water in which the perch were known for their large size, the thought being to build up a supply of

(Continued on Page 9)



SELECTIVELY BRED PERCH

NOVEMBER DISTRIBUTION OF FISH AND FROGS

During November, the autumn stocking program of the Fish Commission tapered off somewhat, a total of 666,088 fish and frogs being stocked in waters of the Commonwealth. Included in November stocking were 61,800 brook trout of from 6 to 9 inches in length, 51,920 brown trout from 7 to 12 inches, 71,696 bullhead catfish, 2 to 12 inches, 283,300 bluegill sunfish, 2 to 6 inches, 3,144 yellow perch, 3 to 8 inches, 45,000 minnows, 3-inch average, 1,420 black bass, 4 and 5 inches, 308 pickerel, 14-inch average, and 147,500 frog tadpoles, 3-inch average.

While in number, fish stocked during November did not reach the high distribution peaks of September and October, size averages ran large. December distribution will complete the autumn stocking program.

Following are waters stocked in the vari-

Run; brown trout, Driftwood Branch Sinnemahoning Creek.

Carbon—brook trout, Quakake Creek, Aquashicola Creek, Hickory Run, Mud Run, Big Bear Creek, Hayes Creek, Pine Run, Wild Creek, Stony Creek, Mauch Chunk Creek, Hunter Creek or Yeagers, Fawn Run, Lesley Run; catfish, Kittatiny Pond, Harrity Dam on Pohopoco Creek, Perryville Dam on Pohopoco Creek, Lizard Creek, Little Gap Ice Dam, Tippet Swamp; frogs, Kittatiny Pond, Perryville Dam on Pohopoco Creek, Harrity Dam on Pohopoco Creek; sunfish, Harrity Dam on Pohopoco Creek, Perryville Dam on Pohopoco Creek, Kittatiny Pond, Lizard Creek, Little Gap Ice Dam, Tippet Swamp.

Centre—brook trout, Cold Stream, Sinking Creek; brown trout, Bald Eagle Creek; catfish, Cold Stream Dam; frogs, Cold Stream Dam; sunfish, Cold Stream Dam.

Chester—brook trout, French Creek; cat-



PENNS CREEK WAS STOCKED WITH BROWN TROUT NEAR ITS HEAD WATERS DURING NOVEMBER

ous counties during November, and species of fish distributed to these water areas.

Adams—catfish, Bermudian Creek, South Branch Conewago Creek; frogs, South Branch Conewago Creek; sunfish, Bermudian Creek, South Branch Bermudian Creek.

Berks—brook trout, West Branch of Pine Creek; catfish, Monocacy Creek, Conestoga Creek, French Creek, Saucony Creek, Naftzinger Mill Dam, Longs Pond, Little Swatara Creek, Reisers Dam, Maiden Creek; frogs, Monocacy Creek, Conestoga Creek, Naftzinger Mill Dam, Saucony Creek, Longs Pond, Little Swatara Creek, Reisers Dam, Maiden Creek; sunfish, Saucony Creek, Naftzinger Mill Dam, Longs Pond, Little Swatara Creek, Reisers Dam on Seidles Run, French Creek, Conestoga Creek, Monocacy Creek, Maiden Creek.

Bradford—brook trout, Seeley Creek, South Creek, Daggett Creek.

Bucks—catfish, East Swamp Creek or Swamp Creek, Deep Run, Little Neshaminy Creek, Northeast Branch Perkiomen Creek, Tohickon Creek, Three Mile Run, Tinicum Creek; sunfish, Northeast Branch of Perkiomen Creek, Tohickon Creek, Tinicum Creek, Three Mile Run, Little Neshaminy Creek, Deep Creek, East Swamp Creek.

Cameron—brook trout, East Branch Hicks

fish, East Branch Brandywine Creek, Blue Quarry Hole, Black Dam on Pine Creek, Mill Pond, French Creek, Buck Run, East Branch Octoraro Creek, Muddy Creek, Delchester Farms Dam on Indian Creek, Delchester Farms Dam on Ridley Creek, East Branch Big Elk Creek, Big Elk Creek; sunfish, French Creek, Mill Pond, Black Dam on Pine Creek, East Branch Brandywine Creek, Blue Quarry Hole, Buck Run, Muddy Creek, East Branch Octoraro Creek, Delchester Farms Dam on Indian Creek, Delchester Farms Dam on Ridley Creek, East Branch Big Elk Creek, Big Elk Creek; frogs, Delchester Farms Dam on Indian Creek, Delchester Farms Dam on Ridley Creek, East Branch Brandywine Creek, French Creek, Mill Pond, Black Dam on Pine Creek, Blue Quarry Hole.

Clarion—catfish, Red Bank Creek; frogs, Red Bank Creek; minnows, Red Bank Creek.

Cumberland—bass, Conodoguinet Creek; catfish, Hairy Spring Hollow Creek, Conodoguinet Creek, Carlisle Water House Dam, Yellow Breeches Creek, Harrisburg Sportsmens Dam No. 1, Harrisburg Sportsmens Dam No. 2, Susquehanna River, Mountain Creek, Laurel Ore Pit, Means Creek or Middle Spring Creek, Fuller Lake; sunfish, Conodoguinet Creek, Hairy Spring Hollow

A Varied Catch from "Deep Down"

Charles Lucas of West Chester, president of the Promised Land Sportsmen's Association, believes that when in fishing deep water you've got to put the bait down to where the big fellows congregate.

His theory was vindicated while fishing Lake Wallenpaupack late in September. Included in his catch was a 26-inch wall-eyed pike, weighing 4 pounds, 11 ounces, several bullhead catfish measuring 14 inches in length, and several yellow perch measuring 13 inches.

Creek, Yellow Breeches Creek, Carlisle Water House Dam, Harrisburg Sportsmens Dam No. 1, Harrisburg Sportsmens Dam No. 2, Susquehanna River, Laurel Ore Pit, Mountain Creek, Means Run, Fuller Lake; frogs, Carlisle Water House Dam, Yellow Breeches Creek, Susquehanna River, Harrisburg Sportsmens Dam No. 1, Harrisburg Sportsmens Dam No. 2.

Dauphin—catfish, Conewago Creek, Aberdeen Dam, Powells Creek, Stony Creek, Swatara Creek, Penna. Canal Reservoir; sunfish, Conewago Creek, Aberdeen Dam on Conewago Creek, Stony Creek, Powells Creek, Swatara Creek, Penna. Canal Reservoir; frogs, Conewago Creek, Aberdeen Dam on Conewago Creek, Stony Creek, Powells Creek, Penna. Canal Reservoir, Swatara Creek.

Forest—bass, Allegheny River; catfish, Allegheny River.

Huntingdon—catfish, Little Trough Creek.

Jefferson—catfish, Red Bank Creek; frogs, Red Bank Creek; minnows, Red Bank Creek.

Juniata—catfish, Cocolamus Creek, Pomeroy's Dam, Juniata River, Licking Creek, Tuscarora Creek; frogs, Cocolamus Creek, Pomeroy's Dam on Tuscarora Creek; sunfish, Pomeroy's Dam, Cocolamus Creek, Licking Creek, Tuscarora Creek, Juniata River.

Lackawanna—brook trout, Lehigh River, Roaring Brook, West Branch of Wallenpaupack; brown trout, Lehigh River, Roaring Brook.

Lancaster—brook trout, Climbers Run or Steinman Run, Stewarts Run or Bonemill Run; catfish, Conowingo Dam, Holtwood Dam, Safe Harbor Dam, Middle Creek, Little Chickies Creek, Stovers Dam, Big Chickies Creek, Muddy Creek; sunfish, Conowingo Dam, Holtwood Dam, Safe Harbor Dam, Little Chickies Creek, Middle Creek, Stovers Dam, Big Chickies Creek, Muddy Creek; frogs, Conowingo Dam, Holtwood Dam, Safe Harbor Dam, Middle Creek, Little Chickies Creek, Muddy Creek.

Lawrence—catfish, Municipal Golf Course Pond; frogs, Municipal Golf Course Pond; minnows, Taylor Run; sunfish, Municipal Golf Course Pond.

Lebanon—catfish, Strauss Dam, Swatara Creek; frogs, Strauss Dam on Monroe Creek, Swatara Creek; sunfish, Strauss Dam on Monroe Creek, Swatara Creek.

Lehigh—catfish, Indian Creek Park Dam, Hosensock Creek, Smoyer Milling Co. Dam; frogs, Smoyer Milling Co. Dam, Indian Creek Park Dam; sunfish, Hosensock Creek,

Indian Creek Park Dam, Smoyer Milling Co. Dam.

Luzerne—brook trout, Harvey's Creek, Nescopeck Creek, Wapwallopen Creek, Bear Creek, Arnold's Creek, Bolward's Run, Little Shickshinny Creek, Bowman's Creek, Shades Creek, Philips Creek, Maple Creek, Wright Creek, Linesville Creek; brown trout, Lehigh River, Huntingdon Creek, Wapwallopen Creek.

Lycoming—brown trout, Lycoming Creek.

McKean—brown trout, East Branch Tionesta Creek.

Monroe—brook trout, McMichaels Creek, Leavitt's Creek, Dutters Creek, Cherry Creek, Tobyhanna Creek, East Branch Tobyhanna Creek, Big Bushkill Creek, Pohopoco Creek, Pocono Creek; brown trout, Lehigh River,

kill Creek, Twin Lakes Creek, Indian Ladder Creek, Middle Bushkill Creek, Little Bushkill Creek; brown trout, Wallenpaupack Creek, East Branch Wallenpaupack Creek, Lackawaxen River, Raymondskill Creek.

Potter—brown trout, Pine Creek, Allegheny River.

Schuylkill—brook trout, Wolf Creek.

Somerset—brown trout, Flaugherty Creek, Laurel Hill Creek, Whites Creek.

Sullivan—brown trout, Little Loyalsock Creek, Loyalsock Creek.

Susquehanna—brook trout, Tunkhannock Creek East Branch, Lackawanna River, East Branch, Lyons Street Creek, West Branch Lackawanna River, Butler Creek, Upper East Branch Tunkhannock Creek; brown trout, Harmony Creek, Starrucca Creek.



THIS LARGEMOUTH BASS STRANGLED TO DEATH ON THE BULLHEAD CATFISH PROTRUDING FROM ITS JAWS

Broadheads Creek, Paradise Creek; catfish, Weir Lake; yellow perch, Weir Lake.

Montgomery—brook trout, Mill Creek; catfish, Northwest Branch Perkiomen Creek, Macoby Creek, Perkiomen Creek, Ridge Valley Creek, Hosensock Creek, Skippack Creek, Northeast Branch Perkiomen Creek, Towamencin Creek or Towomencin Creek, Golf Mill Creek; frogs, Ridge Valley Creek, Skippack Creek, Northeast Branch Perkiomen Creek, Towamencin or Towomencin Creek, Golf Mill Creek; sunfish, Perkiomen Creek, Northeast Branch Perkiomen Creek, Macoby Creek, Ridge Valley Creek, Hosensock Creek, Skippack Creek, Towamencin or Towomencin Creek, Golf Mill Creek.

Northampton—brown trout, Bushkill Creek; catfish, Paint Mill Dam, Bowers Dam on Bushkill Creek, Hyers Dam on Bushkill Creek, Hokendauqua Creek, Delaware River; sunfish, Bowers Dam on Bushkill Creek, Hyers Dam on Bushkill Creek, Hokendauqua Creek, Paint Mill Dam on Monocacy Creek, Delaware River; frogs, Paint Mill Dam, Hokendauqua Creek, Hyers Dam on Bushkill Creek, Bowers Dam.

Perry—catfish, Susquehanna River, Juniata River, Sherman's Creek, Little Buffalo Creek; frogs, Sherman's Creek; sunfish, Sherman's Creek, Susquehanna River, Juniata River, Little Buffalo Creek, Pa. Power and Light Co. Dam.

Philadelphia—catfish, League Island Lake, Chamoniux Lake; frogs, League Island Lake, Chamoniux Lake; sunfish, League Island Lake, Chamoniux Lake.

Pike—brook trout, Shohola Creek, Raymondskill Creek, Saw Creek, Kellam Creek, Sawkill Creek, Dingmans Creek, Big Bush-

Tioga—brown trout, Pine Creek.

Union—brown trout, Penns Creek, White Deer Creek; minnows, North Branch Buffalo Creek, Rapid Run.

Venango—brown trout, Pithole Creek.

Warren—brown trout, Jackson Run, Brown Run, West Hickory Creek, Tionesta Creek, East Branch Tionesta Creek, Caldwell Creek; frogs, Allegheny River; sunfish, Allegheny River; yellow perch, Allegheny River.

Washington—yellow perch, Willow Beach Lake.

Wayne—brook trout, Mile Brook, Calkins Creek South Branch, Babbittville Creek, West Branch Lackawaxen River, Big Branch Dyberry Creek, Middle Creek, Lehigh River, North Branch Calkins Creek, Calkins Creek, Johnson Creek, Equinunk Creek, Middle Creek, Shad Pond Creek; brown trout, Wallenpaupack Creek, Little Equinunk Creek, Seventeen Mill Creek, West Branch Wallenpaupack Creek, Dyberry Creek, West Branch Lackawaxen River, Lackawaxen River; pickerel, Bigelow Lake.

Westmoreland—brown trout, Jacobs Creek.

Wyoming—brook trout, Meshoppen Creek, Leonards Creek, North Branch Mehoopany Creek, Bowmans Creek, Mehoopany Creek, Riley Creek, Beaver Run, West Branch Meshoppen Creek.

York—catfish, West Branch Codorus Creek; frogs, West Branch Codorus Creek; sunfish, West Branch Codorus Creek.

A giant carp was taken recently from the ore pits at Ironton, Lehigh County, according to Warden Joel Young of Fullerton. The carp, weighing 22 pounds, was landed by Howard Newcomer, Allentown.

Selective Breeding

(Continued from Page 7)

brood stock of a very large strain which could be retained at the hatchery. These crosses proved more satisfactory than had been anticipated, the offspring exceeding the foundation stock in size.

As additional water acres were acquired at the Pleasant Mount Hatchery, a portion of Unit Number One was set aside for the retention of the selectively bred brood stock. This supply has been increased until today the hatchery can produce yearly two hundred million perch eggs. Four years ago, sufficient brood stock having been developed, the rescue work on the surrounding lakes was discontinued. Owing to the available pond space at the above mentioned hatchery, all the brood perch are retained there. At spawning time, the eggs are shipped either green or eyed to the other hatcheries.

(To Be Continued)

Catches Goldfish

Up on Lake Erie the taking of goldfish is not unusual enough to write home about, but when a bona fide gold fish of fair size is taken in a well-known bass stream such as the Conococheague Creek, that's something to perk up the ears a bit.

Coming to the point, Special Warden Bill Keebaugh of Hustontown, made this unusual catch. At the time, in late September, he was fishing in the Conococheague Creek near Fannettsburg, Franklin county. The gold fish measured 10½ inches in length.

It is believed that some bass fisherman using gold fish for bait may have released it into the stream after his fishing trip had ended.



CHAS. BROTHERS WITH TWO BIG WALL-EYED PIKE FROM THE SUSQUEHANNA



A BATTLING RAINBOW TROUT TAKEN BY HON. KENNETH A. REID, BOARD MEMBER



Seth Says

I figger there ain't much better fishin' to be found anywhere than winter fishin' fer suckers. Ef there's one thing I take a

shine to, it's diggin' me a can o' worms, takin' the old cane fishin' pole, and hiein' down to the crick. Cold? Sure it's cold sometimes, but with a good fire o' driftwood aburnin' close to the poles, a feller don't need to mind a snow squall or the winter weather. And let me tell you fellers that ain't tried eatin' winter-caught suckers, you've never tasted a sweeter fish anywheres.

Not more'n three weeks back, I got a hankerin' fer suckers. It was while we was havin' that mild weather, and the ground wa'n't frozen too bad fer me to get a few red worms. Well, sir, I hadn't but got settled right down where the trout run comes into the creek, when the suckers begun bitin'. I hossed in five big uns, in a half hour's time. Had a couple sixteen-inchers in the bunch. That's plenty fer any family, so I was back to my place in short order.

There's somethin' about this winter fishin' that gets a feller. Mebbe it's on account of the noise them bluejays make carryin' on over on Pine Ridge. Anyways, I'd tell any feller that he don't know what he's missin' by not tryin' it sooner. Fer me, fishin' any old time o' the year is jest the nearest thing a feller can get to feelin' right with hisself.

Game Fish Cannibals

(Continued from Page 3)

game fish, frequently slaying when it is gorged with food.

A study of the pickerel under close confinement leads to the belief that it is the outstanding cannibal of the game fish group. It combines several characteristics of fish that prey upon others of their own species. It lacks the heavier scales and spiny rayed dorsal fin of the bass and wall-eyed pike, and the young are therefore more easily devoured. When pickerel of varying sizes are being retained at the hatchery it is not uncommon to see a 12-inch pickerel swimming contentedly about with a tail and the portion of the body of a 9-inch pickerel protruding from its jaws.

Game fish cannibals do not always swallow their prey entirely. If the victim is too large, it is worked down the gullet as the process of digestion takes place. Instances are on record when the head of the victim has been entirely digested while the tail is still protruding from the killer's mouth. When living in a wild state the cannibalistic tendencies of pickerel are not so marked. By instinct they are lone hunters, not traveling in schools and seeking their prey inshore among aquatic plants and vegetation. In their lonely wanderings over a somewhat limited forage range, they do not often encounter other pickerel. Their food in a wild state is therefor more frequently minnows and other forage fishes that travel in schools.

Trout

Large trout, like other game fishes, do not hesitate when driven by hunger to devour

smaller specimens of their kind. An old individual, because of its greater body needs, frequently will strike a fingerling trout and from this apparently small beginning, turn into a confirmed cannibal. This tendency to cannibalism, it is believed, is more pronounced in the instance of brown trout only because their growth to larger size entails a greater body need for existence than is the case with brook trout. Both species, being superb game fishes, have an inherent instinct to kill. In their environment, however, the competition for food is not so keen as that in warmer streams and lakes, and large trout are unquestioned masters of their home pools. Where other forms of forage are abundant, they do not often revert to cannibalism.

Commissioner Deibler, while fishing on a famous trout stream in northeastern Pennsylvania last spring, had an experience that clearly illustrates the tendency of large trout to feed upon their offspring. At the time, he was fishing with a barbless nymph, and having carefully approached a pool, was rewarded by a strike from a trout of six or seven inch length. Carefully playing the fish in order not to injure it, the Commissioner had brought it to the surface near shore. An instant later, a giant trout darted like a fast moving shadow from the shelter of the log, seized the smaller fish, and in its rush carried trout, hook and leader away.

A large trout, when making a kill, generally strikes its victim at midbody. After the strike, it settles slowly to the bottom, where it lies practically motionless while the prey is being turned to swallow. A short time later, it starts to move slowly back

Of Interest to Carp Fishermen



THAT SUSQUEHANNA CARP

A recent newspaper dispatch from France tells of the catching of a 39½ pound carp, three feet long, from the River Crosse. Ichthyologists estimated the age of this fish at from 120 to 140 years. They probably based their estimate on the waves or growth cycles on the scales of the fish.

This year a carp was caught in the Susquehanna River, near Harrisburg, weighing 40 pounds 8 ounces. Just how old this carp might be would be very difficult to say as the scales were not examined, but it is known that it could not have been as old as the French carp as carp were not introduced to Pennsylvania waters until the latter part of the nineteenth century.

and forth. If the smaller trout is of size sufficient to cause difficulty, the killer may swim about in the water for some time before the prey has been forced down its gullet. The grinding power of the big trout's jaws is in evidence almost immediately after the strike, and the death convulsions of the victim become weaker noticeably in a very brief time. To observe this tragedy of a trout stream brings a full realization of the remorseless code that governs life in the waters. Game fish generally turn the victim, if the prey is another fish, before swallowing it, as the scales and fins of their prey then lie flat while it is passing down the gullet.

This phase in the existence of game fish species is not so often encountered by anglers during their trips astream. Apparently there is a close relationship between an injury inflicted on a fish and its digestive tract. Frequently during its struggle to break away from the hook, if its stomach is filled with food, the fish will disgorge itself before being taken from the water.

Ruthless destroyers, bass, pickerel, wall-eyed pike and trout represent the highest form of fish life in our inland waters. Eternal warfare between game species constitutes one of the most fascinating chapters in the story of the water world, and

Fish Commission Will Enforce License Law During 1934 Season

During the months of January, February and March, the entire enforcement branch of the Board of Fish Commissioners will spend their time on the waters in their various districts in connection with the enforcement of the Fisherman's License Law.

The Board of Fish Commissioners believes that in 1933 it made very liberal concessions to fishermen who were found along the waters without the necessary license, and sufficient warning was given at that time. It will be the duty of every officer commencing with the first day of January, 1934, to arrest any person fishing without a license, and prosecution will be made, regardless of whether or not the defendant can pay the fine. In the mind of the Board, there is no

reason why any fisherman should expect to angle in any waters of the State without the necessary license any more than he would operate an automobile or go gunning without the license prescribed by those branches of the State government.

Many counties during the last year have seen fit to release persons who were committed to jail in lieu of the payment of their fine, and if this should occur in 1934, more drastic action will be taken. It is hoped this message will reach all those who fish in the Commonwealth, and if they happen to be fishermen who are not in a position to purchase a license, that they will refrain from fishing in any of our waters, until they have made arrangements to have someone get them the necessary badge or button.

their cannibalism is but a characteristic, an instinct that has caused them to be termed "game" and endeared them to the hearts of Pennsylvania fishermen as "fighting fish."

NEW ROADS BOON TO FISHING

For many years, a problem that has confronted the Fish Commission for which no remedy existed other than intense stocking was the overfishing in water areas easily accessible by modern highways. The concentration on these areas reflected poorly on Pennsylvania fishing while many productive and beautiful waters were utilized but very little.

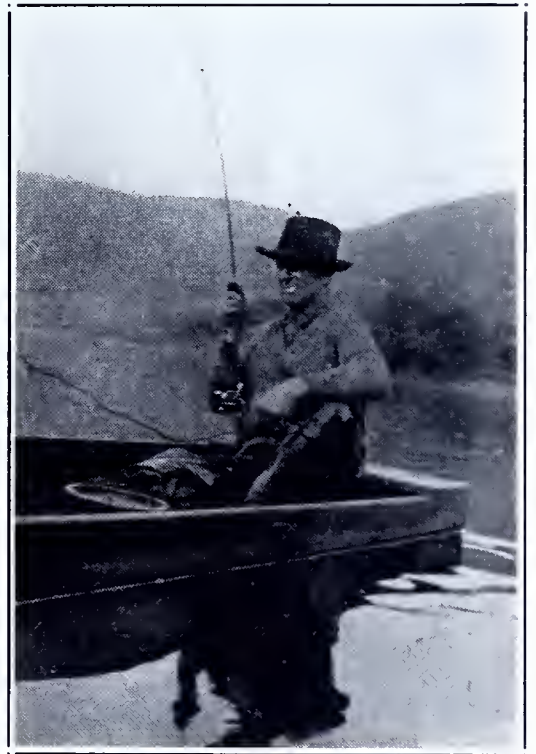
Trout Eggs Now Being Hatched

The trout hatcheries located at Pleasant Mount, Corry, Tionesta, Bellefonte, Hunsdale, and Reynoldsdale have brought to a close their fall trout distribution. Activities at these plants, however, have not ceased as the hatching troughs are filled to capacity with brook and brown trout eggs newly hatched, brook and brown trout eggs in incubation, or newly hatched fry that are the nucleus for next year's distribution.

A Prize Wall-eyed Pike from Wallenpaupack

Joseph Snedden, of Nyack, N. Y., caught two outstanding game fish in Lake Wallenpaupack, last season, both of them large enough to win more than one fishing contest in their respective classes.

Snedden's first catch, a six pound pickerel, received plenty of notice from the angling fraternity about the lake. Then, just to show those skeptical about Wallenpaupack fishing that other big fish still haunted its clear depths, he landed a 31-inch wall-eyed pike, weighing 10¼ pounds. Incidentally, this great pike takes rank with the largest caught in Pennsylvania last year.



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HERE ^{A_ND} THERE IN ANGLERDOM



It's the unusual in fishing that makes it a truly great sport. If you don't believe it, consult Walford Larson of Titusville, who landed the largest muskie reported to the Fish Commission last year. In commenting on his catch, made in Canadohta Lake, Larson said that it was the first time he had fished Canadohta. Furthermore, he was casting plug with the expectation of hooking a bass when the "water tiger" struck. And to top his experience, just as he was about to gaff the big fish, it jumped into his canoe, where it was killed.

Everett Leicht of Milford, a guide who

pike, each weighing three pounds, and a number of crappies.

Feminine anglers scored heavily in taking game fish during 1933, according to reports received from wardens. Russell Womelsdorf, warden at Kingston, told recently of the landing of two big wall-eyed pike in Lake Carey by Mrs. Charles McKown of Tunkhannock. One of the pike weighed six pounds, 10 ounces, the other six and one half pounds. Mrs. McKown, by the way, is regarded as one of the most expert pike anglers in the vicinity of Tunkhannock, and is very adept at trolling.

weighed 14 pounds and 10 pounds respectively.

Constable Elmo Underkoffler of Gilbertsville made a fine catch of largemouth bass in the Perkiomen creek near Green Lane last fall. Included in his catch were three bass of 14 inches, and four, 13 inches.

The "white waters" of the Susquehanna river near Bloomsburg, yielded a smallmouth bass measuring 18½ inches in length to H. H. Eardman of Paxinos, according to Warden Charles Litwhiler.

Looking back to a great 1933 trout season, a report sent in by Special Warden Dave Dahlgren of Philipsburg is interesting. The lower waters of the Black Moshannon furnished George Lawrence of Winburne with fine sport on May 3. Lawrence caught 15 brown trout weighing 13 pounds.

If autumn fishing during the past year was any indication, the anglers should find real sport on Little Beaver, Brush and Connoquenessing Creeks next year, according to Warden Jim Simmons of Rochester. Exceptionally fine catches of bass were made on these waters during the fall months.

An outstanding smallmouth bass was caught by Harold Cable, of Ellwood City, in Conneaut Lake. Cable's catch weighed 4½ pounds.

Lake Carey yielded a fine wall-eyed pike to Rev. William Noll of Schuylkill Haven. The big pike weighed six pounds, two ounces, according to Warden Russell Womelsdorf, of Pittston.



STILL-FISHING FOR BASS ON THE RAYSTOWN BRANCH OF THE JUNIATA RIVER

knows Pike county's famous fishing waters like a book, had the distinction of landing the largest brown trout reported from that county last season. Warden Frank Brink of Milford writes that Leicht, while fishing in Vander Mark brook, at a point a short distance above its place of juncture with the Upper Delaware, caught a brown trout 26 inches in length. The big brownie tipped the scales at six pounds. It was taken during May, and was the largest of a creel of three big brown trout caught during the day's angling.

A party of fishermen from near Johnstown, Lester Jacobs, Fred Burbella and Louis Sheets made a varied catch of game fish in the Raystown Dam, Huntingdon county on October 3, according to Warden Charlie Long of East Waterford. Their catch consisted of 10 smallmouth bass ranging in weight from 2½ to 3 pounds, two wall-eyed

In addition to providing exceptional fishing for bass and wall-eyed pike last season, the North Branch of the Susquehanna River furnished excellent fishing for rock bass. In size and number, these popular game fish caught in the Branch were outstanding.

Warden Del Broadbelt, of Pocopson, reports that the dam on Crum Creek owned by a water company was a popular fishing resort for hundreds of fishermen in the vicinity of Philadelphia. In one day, Broadbelt counted 200 fishermen at the dam and good catches were made during the season.

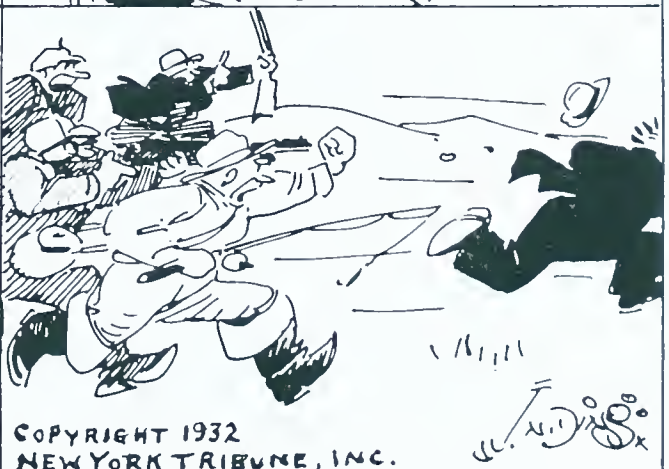
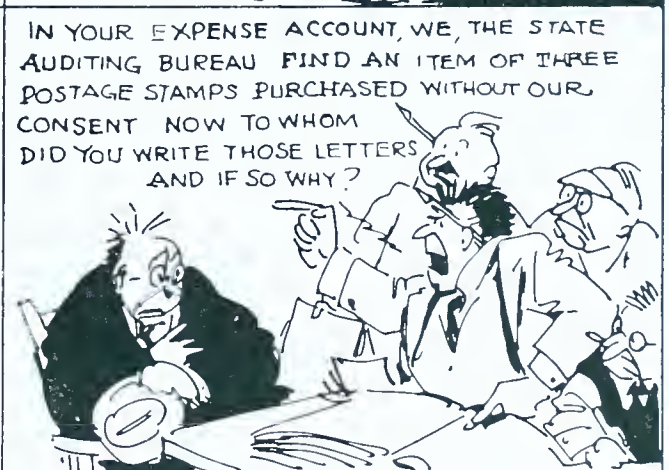
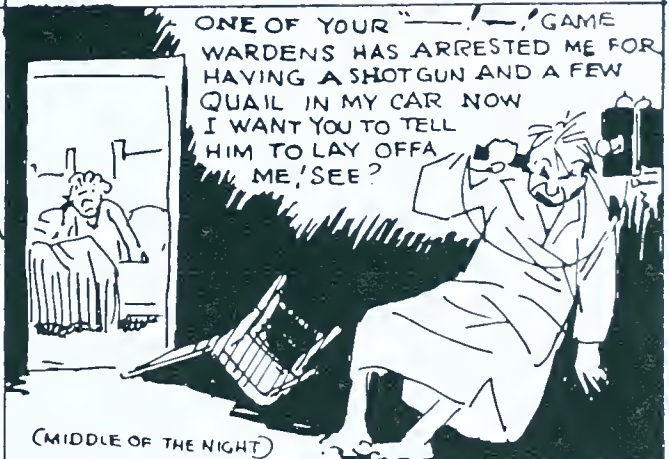
Conneaut Lake muskies furnished plenty of fishing thrills during the autumn. Included in catches reported by Special Warden Joe Cannon were three "water tigers" taken by Lew Walker, of Meadville. The largest of the fish was 49 inches long, weight 25 pounds, while the other two

Speaking of Largemouth Bass, How's This Catch?

The Oneida dam in Butler County furnished great largemouth bass fishing during the past season, according to Special Warden J. H. Bergman of Butler.

Alex Skendler, Pittsburgh angler, scored a banner catch this autumn on the dam. Five largemouths, exceptionally heavy in girth, were caught by Skendler, the fish having a combined weight of 19½ pounds.

A Butler fisherman, Paul Titus, also scored a splendid catch this fall, taking three bass, each of them 21 inches in length, that weighed 10½ pounds.



THE PENNSYLVANIA

FISHERMAN'S CALENDAR 1934



ANGLER

WANT GOOD FISHING?
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GEORGE FRAY

SUCKER FISHING MONTHS

1934 JANUARY 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	1	2	3	4	5	6
☾	7	8	9	10	11	12
☾	13	14	15	16	17	18
☾	19	20	21	22	23	24
☾	25	26	27	28	29	30
☾	31					

1934 FEBRUARY 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾		1	2	3
☾	4	5	6	7	8	9
☾	10	11	12	13	14	15
☾	16	17	18	19	20	21
☾	22	23	24	25	26	27
☾	28	29	30			

1934 MARCH 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾	☾	1	2	3
☾	4	5	6	7	8	9
☾	10	11	12	13	14	15
☾	16	17	18	19	20	21
☾	22	23	24	25	26	27
☾	28	29	30	31		

TROUT FISHING MONTHS

1934 APRIL 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	1	2	3	4	5	6
☾	7	8	9	10	11	12
☾	13	14	15	16	17	18
☾	19	20	21	22	23	24
☾	25	26	27	28	29	30
☾	31					

1934 MAY 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾	☾	1	2	3
☾	4	5	6	7	8	9
☾	10	11	12	13	14	15
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1934 JUNE 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾	☾	☾	1	2
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☾	9	10	11	12	13	14
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BASS FISHING MONTHS

1934 JULY 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾	☾	☾	☾	☾
☾	1	2	3	4	5	6
☾	7	8	9	10	11	12
☾	13	14	15	16	17	18
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☾	25	26	27	28	29	30
☾	31					

1934 AUGUST 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾	☾	☾	☾	☾
☾	1	2	3	4	5	6
☾	7	8	9	10	11	12
☾	13	14	15	16	17	18
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☾	25	26	27	28	29	30
☾	31					

1934 SEPTEMBER 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾	☾	☾	☾	☾
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☾	13	14	15	16	17	18
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☾	25	26	27	28	29	30
☾	31					

BASS FISHING MONTHS

1934 OCTOBER 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾	☾	☾	☾	☾
☾	1	2	3	4	5	6
☾	7	8	9	10	11	12
☾	13	14	15	16	17	18
☾	19	20	21	22	23	24
☾	25	26	27	28	29	30
☾	31					

1934 NOVEMBER 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾	☾	☾	☾	☾
☾	1	2	3	4	5	6
☾	7	8	9	10	11	12
☾	13	14	15	16	17	18
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☾	25	26	27	28	29	30
☾	31					

1934 DECEMBER 1934

SUN	MON	TUE	WED	THU	FRI	SAT
☾	☾	☾	☾	☾	☾	☾
☾	1	2	3	4	5	6
☾	7	8	9	10	11	12
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☾	19	20	21	22	23	24
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☾	31					

Trout—Brook, Brown, Rainbow, April 15th-July 31st. Black Bass, Pike-Perch, Pickerel, Rock Bass, Muskellunge, July 1st-Nov. 30th. Sunfish, Fallfish, Yellow Perch, Suckers, Catfish, Eels may be taken at any time of year. Sunday Fishing Not Permitted.

PENNSYLVANIA ANGLER



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VOL. 3
NO. 2

OFFICIAL PUBLICATION
BOARD OF FISH COMMISSIONERS

FEBRUARY
1934

OFFICIAL STATE
PUBLICATION

PENNSYLVANIA ANGLER

FEBRUARY, 1934
Vol. 3 No. 2

PUBLISHED MONTHLY

by the

Pennsylvania Board of Fish Commissioners

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South Office Bldg., Harrisburg, Pa.

GEORGE GRAY, *Illustrator*

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NOTE

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All contributions returned if accompanied by first class postage.

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COMMONWEALTH OF PENNSYLVANIA
BOARD OF FISH COMMISSIONERS

OLIVER M. DEIBLER
Commissioner of Fisheries

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PENNSYLVANIA ANGLER

FEBRUARY, 1934

VOL. 3

No. 2

EDITORIAL

Land Posting Target of Organized Sportsmen

"No Trespass" signs, and the threat they hold to future fishing and hunting in Pennsylvania constitute a very real and pressing problem for our sportsmen. That Pennsylvania's vast network of streams and woodland might at some future date be so curtailed in area as to work hardship on our great army of outdoorsmen is a possibility that demands immediate attention. Fortunately, steps are now being taken to combat this evil, steps on the part of the sportsmen that are based on the finest principles of true sportsmanship. I believe that the very backbone of our great conservation system in Pennsylvania is this spirit of fair play. By playing the game according to the finest rules that govern it, our sportsmen are forging steadily ahead to the goal of "no posted lands."

This campaign against posted lands is being waged successfully in various sections of the state. In the Poconos and in Clinton county, sections famous for the splendid fishing and hunting they offer, the sportsmen have taken an aggressive part in fostering a feeling of friendship between landowners and those who fish and hunt on their property. I refer to the Monroe-Pike Sportsmen's Association and the Clinton County Fish and Game Association. Both organizations, through vigorous poster campaigns, have aided in cementing a bond of understanding and friendship between landowners and sportsmen in their vicinities. The posters are shown in the cut accompanying this editorial. They call to sportsmanship of the high-

ARE YOU A SPORTSMAN?

You are using this Property by Courtesy of the

- LAND OWNERS -

BE A REAL SPORTSMAN and be as careful of the Property as though it were your own.

Do Not Destroy Property or Tear Down Fences, or Leave Gates Open

Respect the Property of the Land Owner and you can be sure of a Continuance of Good Sport.

Monroe-Pike Sportsmen's Association

To be a Sportsman - Act Like One

est order, and I believe are noteworthy examples of just how the fisherman and hunter can benefit the cause of conservation.

Consider the facts in these splendid posters. The Monroe-Pike Association and the Clinton County Association strike a keynote in the first sentences: "Are You A Sportsman?" and "Take Notice! You Are The Guest of the Owner." They stress courtesy and consideration, two vital factors that are basic principles in the campaign against "No Trespass" signs. I am convinced that adoption of the "courtesy-consideration" code by our sportsmen would strike a death blow to the land posting threat.

A major consideration in Pennsylvania conservation today is sufficient water for the angler to fish and sufficient cover for the gunner to hunt. When a trout stream, even though it is small, is posted, the "no trespass" signs along its course deprive a certain number of fishermen of sport. From another angle, the hatcheries owned by the fishermen of Pennsylvania and operated by their Fish Commission are turning fish into all public waters at a constantly increasing rate. Obviously, curtailment of the water areas available for distribution must lead to overstocking in open areas and result eventually in injury to certain streams lacking sufficient food and cover for a large number of fish. Fishing as a sport is increasing in popularity each year, and attracting additional thousands of sportsmen to our waters. Modern methods of production and distribution have eliminated to a major extent guesswork in stocking. A vital need at the present time, therefore, is greater stocking range, and posted lands constitute a serious stumbling block to achieving this objective. Harmony between sportsmen and landowners is ap-

TAKE NOTICE!

YOU ARE THE GUEST OF THE OWNER

Protect Him

Be Careful

Respect Him

Thank Him

BE A SPORTSMAN!

PREVENT FIRES

SPONSORED BY

Clinton County Fish & Game Association

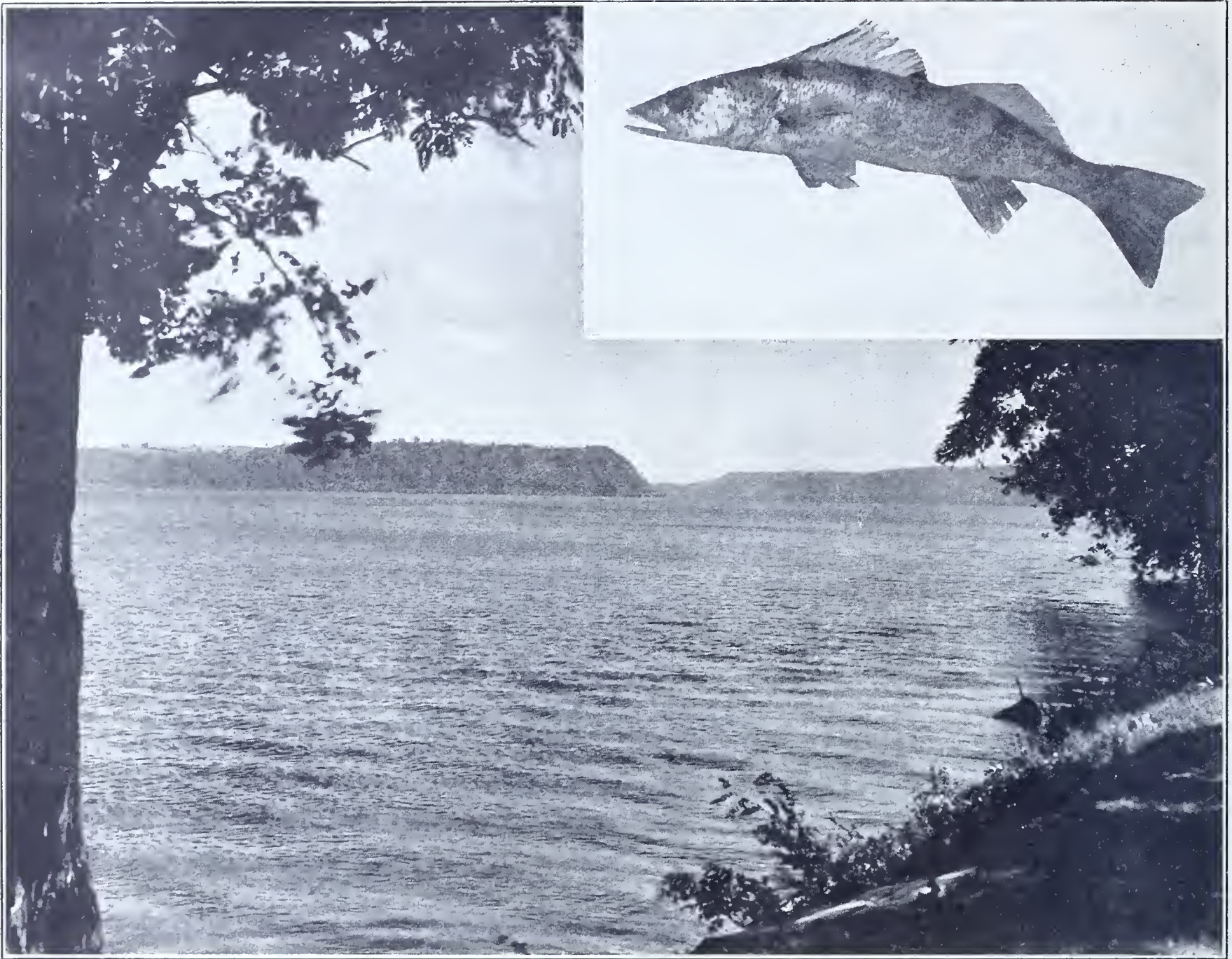
parently an outstanding factor in the drive for better fishing, and promotion of understanding is a first-rate way to achieve it.

Lands closed to fishing and hunting often affect a section in which they exist in another way. Certain sections of the state, noted as good fishing or hunting territory, attract thousands of sportsmen annually. Clearly, sportsmen coming into these localities help business by spending money to follow their favorite sports. Often farmers board fishermen and hunters during the open season, realizing in this way not only financial profit, but establishing friendship with others from different sections of the state. The landowner plainly is affected to some degree by "No Trespass" signs and should do all within his power to keep them off property.

Good sportsmanship, as stressed by the Clinton County Fish and Game Association and the Monroe-Pike Sportsmen's Association is a real stride forward in making available more fishing waters for our anglers. It means, in brief, cooperation of sportsmen and landowners in the campaign against "No Trespass" signs. Here is a method of improving our fishing that is at the disposal of every angler. We must pull together to put it across.



Commissioner of Fisheries



FINE TROLLING WATER FOR PIKE-PERCH ON THE LOWER SUSQUEHANNA. UPPER RIGHT—THE PIKE-PERCH—EVERY INCH A GAME FISH

THE PIKE-PERCH IN PENNSYLVANIA

WHEN was the pike-perch, otherwise known as the wall-eyed pike or Susquehanna salmon, first introduced to Pennsylvania waters? Mystery, to a certain extent, veils its coming to streams that today offer no game fish of finer flavor for the angler to catch. Contrary to general belief, it was not native to our waters. The most authentic account places its introduction at 1812.

Over roads that were little more than trails at that time, report has it, a Jesuit priest and an Englishman transferred, by wagon probably, a few mature pike-perch to the waters of the Chemung, a tributary to the North Branch of the Susquehanna River at Elmira, N. Y., then known as Newton. Early American conservation has few more stirring

episodes than this stocking of the Chemung with a species of game fish that was later to invade the Susquehanna and its larger tributaries as far south as the waters of the Chesapeake Bay. In confirmation of this story is the fact that pike-perch became known in Pennsylvania as Susquehanna salmon, and early history's annals do not mention it in the waters of other state streams. Modern transportation and good roads today make it possible to stock fish successfully within a radius of hundreds of miles of the hatcheries, but this unusual feat of carrying mature fish over a distance of even 12 miles, under the difficult conditions then prevailing, is a tribute to the early conservationists who accomplished it.

So abundant did the pike-perch, or salmon as it was then known, become, that it soon rivaled the shad as a food fish of importance in the Susquehanna, and at one time commanded an even higher price on the market than did the shad. In the days of old-fashioned apprenticeships, the following clause was sometimes introduced into the contracts: "That Salmon should not be given more than two or three times a week." Firm and flaky in substance, having few bones and a delicious taste, the pike-perch was much sought as food by early settlers. They called it the "swagger salmon."

Of the names given to this popular fish, and they are numerous, pike-perch is perhaps the most appropriate, linking this spe-

ies with the perch family to which it is related and suggesting certain characteristics of the pike family. Here in Pennsylvania it is known as wall-eyed pike, yellow bass, jack salmon, green pike, occasionally pickerel and white salmon, and frequently Susquehanna salmon. In the north woods, the Cree Indians call it the okow, while to the French Canadians it is the dore or picarel.

In the swift-flowing Susquehanna, with its great shallows, deep pools, rock ledges and pebbly bottom, the pike-perch apparently found an ideal home. Their increase in number was so rapid, that within a comparatively short time they literally swarmed in the deeper pools and eddies. Had hook and line fishing prevailed, as it does today, this vast supply of a valuable food and game fish would undoubtedly have remained abundant. Instead they were harried day and night by seines, trap-nets, and gigging. That hook and line fishing was coming into its own is brought out, however, by the following report of the Commissioners of Fisheries for 1895:

"Nescopeck Falls, directly opposite Berwick, near where the Nescopeck Creek empties into the river was a noted place for 'salmon' fishing with hook and line. Men standing on the shore with long poles and lines would often, in drawing out the fish, lodge them in the branches of trees, giving them the appearance of salmon-producing trees. The present generation fish for them by two methods, by still fishing with minnows and by trolling. In angling by the first manner, live minnows are used in preference to all other baits, particularly such as are more or less transparent with silvery sides, as the fall-fish or dace, the corporal roach, the red fin and the gudgeon. When trolling, the favorite method between Columbia and Harrisburg, a small lamprey eel is usually attached to the spoon in place of the feathers, sunk very deep, near a rocky ledge and drawn through the water much more slowly than when after other species of fish.

"When a pike-perch first strikes, it is not a strong, vicious try that is felt, such as other members of his family give, but a steady pull such as might be made by a man hauling in a line with his feet braced. This peculiarity often leads the angler to imagine for a time that his hook is fast on a log. But when the fish is brought near the surface it abandons the sullen hangback policy and begins a vigorous fight for its life. . . . It is a peculiarity of many of the boatmen of this section, that when a fish is struck he will begin rowing as endeavoring to escape from an enemy, and unless stopped very quickly will succeed in drowning the pike-perch before the angler has a chance to extract any sport from his catch. This curious habit is due, it is said, from their own habit when fishing to get their prey out of the water as speedily as possible."

When the Board of Fish Commissioners, then known as the Board of State Commissioners of Fisheries, was organized in 1873, attention was almost immediately called to the rapid decrease of the pike-perch in the Susquehanna and its tributaries. At the time, however, owing to absence of proper laws for its protection and knowledge relative to artificial propagation, it was impossible to check the depletion in number of these game



STILL-FISHING ON THE SUSQUEHANNA YIELDED THIS CATCH OF PIKE-PERCH OR WALL-EYED PIKE

fish. A turning point came in 1889, when the United States Bureau of Fisheries succeeded, through use of the McDownald hatching jar, in hatching pike eggs at Sandusky, Ohio. A portion of the fry from these eggs were turned over to the State Commissioners of Fisheries and released in the Susquehanna, Juniata, Delaware, and Schuylkill rivers. Later plantings were made in a number of Pennsylvania inland lakes. With few exceptions, these plantings were successful. The McDownald hatching jar proved a device that was to revolutionize artificial incubation of the eggs. Prior to this time, Pennsylvania fish culturists had learned the process of overcoming the stickiness of pike-perch eggs, but were not familiar with the use of the McDownald hatching jars. The federal government extended every courtesy, sending one of their experts in this work to the Erie hatchery to instruct the superintendent as to the use of these devices. Following installation of the hatching jars, no difficulty was encountered in the incubation process.

Unlike trout, the adult pike-perch cannot be retained in small areas of water at the hatcheries year after year for brood purposes. At the Pleasant Mount hatchery, one of the storage ponds for brood pike covers an area of several hundred acres, having an extreme depth of 20 feet. In this pond, a large number of brood pike are retained and produce eggs annually for stocking suitable streams and lakes.

Habits of the Pike-Perch

The pike-perch, while numerous in some of the larger streams of Pennsylvania, is by preference a lake fish and is very abundant in Lake Erie. Its natural habitat is in clean bodies of water having rock, gravel, sand, or hard clay bottom, and it is rarely found in muddy streams or lakes. It is a denizen of the deeper water, and except at spawning time, seeks water areas of mod-

erate depth. Although living near the bottom, this fish cannot be classed as a bottom feeder or scavenger in any sense of the word. Minnows, lamprey eels, crayfish, smaller forage fishes of various species, and the larvæ of various kind of insects that pass through a transformation stage in the water constitute a major portion of its food supply.

In appearance the pike-perch is striking. Its savage jaws and long, slender body, somewhat characteristic of the pike family, and the strong, shapely fins of the perch mark it as a superb game fish. Viewed under water, the first impression created is that its gray-white eyes, from which it derives the name wall-eye, are blind. From another angle, however, these prominent eyes have the appearance of small balls of fire. The lower raise of the tail fin is white. In coloration the fish varies according to its environment. It may be generally said, however, that its ground color is dark olive, finely mottled with brassy, oblique lines. Like the yellow perch, the pike-perch has two dorsal or top fins, the first fin being spinous. Its average weight is from two to five pounds, although specimens weighing well over ten pounds are occasionally taken.

The spawning run of the pike-perch is, coincident with that of the sucker schools, in early spring. Wherever possible, the fish apparently prefer to run up smaller tributaries to lakes and streams in which they are found, accompanying the sucker migration. Just what takes place at spawning time is not definitely known, although it has been established that they do not pair off as do the sunfish and bass, but congregate on the spawning shoals in groups.

During spawning, sudden changes in water temperature affect the fish, and in the event of freezing temperature they will leave the

(Continued on Page 10)

ATTENTION, SUCKER FISHERMEN

Not only does the Juniata River provide sucker fishing second to none in Pennsylvania, but it furnishes some strange incidents to boot. Here's one reported by Warden Charlie Long of East Waterford.

It seems that Bill Runk of East Salem, Juniata County, was fishing on the river near Van Dyke. In retrieving his line, he lost a hook and snell. A short time later, a sucker started its slow and tedious process of taking the bait. At least, that's the way Bill figured it. To be brief, when he pulled in the line, he found no sucker on the remaining hook. Instead, the lost hook, with a fine big sucker to boot, was found fastened to the hook on Bill's line.

An obliging sucker, writes Charlie.

BASS EXPECTED, LANDS TROUT

When fishing the famous Loyalsock Creek, a strike may just as easily mean a brown trout as a bass. Mrs. H. M. Browning, of Williamsport, had an experience on July 3 that indicates brown trout and bass like the same type of food.

At the time, she was casting for bass near her cottage at Hillgrove. Her tackle consisted of a light fly rod, single gut leader, and No. 5 hook, baited with a helgramite. Following a savage strike and cautious playing, she landed a brown trout 26 inches in length that weighed four pounds, 11 ounces.

VARIED FISHING ON LAKE WALLENPAUPACK

Warden John Schadt of Lake Ariel, who checked on Lake Wallenpaupack catches on the first day of the bass season, found variety in many creels. Harry Miller of Wilkes-Barre caught a nine-pound wall-eyed pike; Harry Miller, Ledgedale, a five-pound large-mouth bass; Fred James, Hawley, a 27½ inch pickerel; Fred Kellam, Hawley, 25 bullhead catfish, one and one-half to three and one-half pounds in weight, and Harold West, Hawley, two smallmouth bass, each weighing four pounds.

That fine fishing prevailed during the entire season on the lake is indicated by a September catch of bass. Four Carbondale fishermen, E. F. Ryan, William Santanna, David Chapman, and Bruno Ealo caught 19 fine bass, three yellow perch and twenty bluegill sunfish on September 6. And speaking of bluegills, those Wallenpaupack sunnies run mighty hefty.

FISHING YESTERDAYS

FISH DAMS UNPOPULAR WAY BACK IN 1732

Fish dams, never popular with sportsmen, aroused the ire of early settlers in Pennsylvania because they very seriously interfered with traffic on the larger streams. The fol-

lowing excerpt is taken from the report of the State Commissioners of Fisheries for 1892-94.

"In May, 1724, a bill was passed for 'demolishing and removing Fishing Dams, Wears, and Kedles set across the River Schuylkill' and on the 15th of August, 1730, by an act to 'prevent the Erecting of Wears, Dams, etc., within the Schuylkill.' The effect of these enactments was, however, evaded, and among the Archives of 1732 is found the following deposition: 'Marcus Huling Saith That as he was going down ye Schuylkill with a Canoe Loaded with wheat, that striking on a fish dam, she took in a great deal of water into ye wheat, by means whereof his wheat was much damnified, and that it was in great danger of being all lost;

"Jonas Jons Saith That in ye month of



ED BOSLER, PIKE COUNTY, "SHOWS OFF" A 22-INCH BROWN TROUT

February, it being Extreem Cold, he stroke fast on a fish Dam, and to save his Load of wheat was obliged to leap into ye River to ye middle of his body and with all his Labour and Skill could not get off in less than half an hour.....

"Jacob Warren Saith That he with a Canoe loaded with wheat stroke fast on a dam, where he with his partner were forced into ye River, and one with all his might was obliged to hold ye Canoe whilst ye other digged away ye stones of ye Dam, and with much difficulty got off.

"Isaac Smalley Saith That going down ye said River with 140 bus. of wheat in a canoe, they stroke fast on a Rack Dam and in order to save ye Load from being all lost, he was much against his mind obliged to leap into ye River, the water being to his Chin frequently dashed into his mouth, where between whiles he breathed, and both he and his partner held ye Canoe with great labor; whiles a young man there present ran above a mile to call help to get off."

BOYS SCORE ON CONNEAUT LAKE

Bob Hornstein, 16, and Billy Rudder, 12, of Meadville, demonstrated to old time fishermen at Conneaut Lake last summer that the younger generation is right at the top in taking fish, according to Special Warden Joe Cannon.

Bob started the ball rolling by catching a 12-pound muskie. Then Billy landed a four-pound wall-eyed pike after a hard tussle.

HATCHERY SUPERINTENDENTS MEET AT SPRING CREEK SITE

Meeting at Bellefonte recently, superintendents of the Fish Commission's hatcheries carefully went over the new stream improvement and trout raising site on Spring Creek, and discussed the improvements being made from a fish cultural standpoint.

Other topics considered at the meeting included problems in the propagation of various species of fish and a thorough discussion of the fish cultural program for 1934. Another plan was worked out whereby the Board's hatcheries and personnel would be operated in compliance with the N. R. A.



Seth Says

Fishin' season ain't the only time I like ter get out on a trout run. A feller don't jest have ter have a pole along to get fun out o' bein'

along a mountain run. Take durin' the fall, fer instance, when the big speckled trout is up towards the headwaters spawnin'. Jest to go out and watch 'em is a treat by itself fer me.

Now then, last fall, when the squirrels was a-workin' in the switch-top hickories back in the Gap, I takes my little target rifle early one mornin'. Didn't take long to kill three nice gray squirrels, so I headed down the old log road to where the run cut under a steep shale bank. There's a big trout in the run that I hooked twicet last season, an' both times he was too smart fer me. Well, I perched near this big hole, and perty soon sees a little swirl down in the shallow end. There he comes, aheadin' into the current, and behind him come a big female trout, heavy with spawn and havin' to struggle perty hard to make headway again the stream.

That big feller that fooled me last year sure did make a man count the days 'til the season opens. His markin's stood out even more bright, them red and bluish spots almost the size o' dimes, than they did when he struck fer me durin' trout fishin'. 'Course that's on account o' the buck trout bein' higher colored in spawnin' time.

I'm a-hopin' to meet up with that trout this year. An' until then, I'll be gettin' a kick in follerin' along the run, a-watchin' the pertiest fish in this state.



BOARD VISITS SPRING CREEK PROJECT. AT EXTREME RIGHT: OLIVER M. DEIBLER COMMISSIONER OF FISHERIES. STANDING IN GROUP. LEFT TO RIGHT—C. R. BULLER, DEPUTY COMMISSIONER, BOARD MEMBERS KENNETH A. REID, DAN R. SCHNABEL, EDGAR W. NICHOLSON, AND H. R. STACKHOUSE, SECRETARY TO BOARD

SPAWNING TIME VARIES FOR BROOK AND BROWN TROUT

It is generally said that the brook trout and brown trout spawn at the same time. Generally speaking this is true, but in Pennsylvania there is a variation of approximately two weeks between the spawning period of these two species; that is, the brook trout spawn earlier than do the brown trout. This was found to be the case on several streams that were being carefully studied by the Fish Commission this fall—for instance, the Yellow Breeches Creek, Spring Creek, Lackawaxen Creek and Logan Branch Creek.

The brook trout made the first migration to the headwaters, deposited their eggs and quickly dropped downstream. The brookie migration was followed in from ten days to two weeks by the brown trout and the same system marked their spawning activities. This probably is as it should be, for the fish are very pugnacious and jealous of their mates at spawning time. During this period it would be just too bad for the brook trout if they were present when their larger cousins, the brown trout, decided to use the same spawning beds.

The North Branch of the Susquehanna River, as usual, this summer produced great catches of smallmouth bass. Warden M. E. Shoemaker, Laceyville, caught one measuring 18½ inches on a fly. Charles Snyder of Tunkhannock landed a smallmouth that weighed three pounds, 14 ounces. Joe Bolich, Scranton, scored with two fine bass, one 18 inches, the other 19½ inches.

BLACK FOREST TROUT FISHING ON UPGRADE

The Black Forest, famous fishing and hunting territory on the North Tier, today offers better trout fishing than it did for the fishermen of twenty-five years ago, according to Horace P. Boyden, warden at Wellsboro.

"I have lived to see a big change in conditions in this Black Forest area," writes Boyden. "When lumbering was started in this section, the mountains were covered by an immense hemlock forest, so dense that the name 'Black Forest' described it perfectly. Hemlock forests meant hemlock bark, and of course, tanneries were established. I can recall 12 large tanneries operating in Tioga county, each located on a stream and pouring black poison in the water. When a fisherman begins to tell me about the 'good old days' of fishing, I think at once of those days of less than 25 years ago, when some Tioga and Potter county streams were so polluted that cattle died by the score every year from drinking their water.

"Last year thousands of bass, pickerel, catfish, and suckers were taken from Crooked Creek, which 25 years ago was a tannery sewer. The same thing might be said of Marsh Creek, and on Pine Creek there are 70 miles of fishing waters that were at one time polluted by seven tanneries, all of which are no longer operated. It is the opinion of a great many old time fishermen in this section that the years 1926 to 1929 were the best fishing years that this area has ever known. Extensive stocking and a break in the drought combine this year to foreshadow another great trout season."

To Improve Stream

At a recent meeting of the Brokenstraw Fish and Game Club, Warden R. C. Bailey, of Youngsville, reports, plans were completed for improvement of Mead Run, a fine trout stream. Members have already started the improvement work.

Included in the wall-eyed pike catches from Lake Carey was that of David Jones of Georgetown. Jones caught a pike weighing six and one half pounds and measuring 26 inches in length.

WHICH BASS PULLED THE HARDEST, ED?

When it comes to bass fishing, count Penn's Creek in the running. Warden Art Snyder, of Mifflinburg, recently reported an unusually fine catch of the gamey bronzebacks. While fishing on the Union County stream, in October, Edward Stitzer, of Mifflinburg, caught a smallmouth bass 22 inches in length, weighing four pounds, five ounces. But apparently his taking of two smaller bass on the same cast during this identical fishing trip caused more excitement.

The two bass measured 13½ and 15½ inches respectively; fighting size, and how those cold water smallmouths in Penn's Creek can fight.

Selective Breeding of the Yellow Perch

By C. R. Buller

Deputy Commissioner of Fisheries

PART II

BEFORE going into this proposition on a large scale, investigations were made on a number of lakes, or ponds, which had previously been stocked with the strain of small yellow perch and later restocked with the selectively bred fish. In 1904, Miller Pond and Stevenson's Pond contained no yellow perch. Records of 1905, 1906, and 1907 show that large plantings of yellow perch were made in these ponds. By 1914, both of these bodies of water afforded very good yellow perch fishing, but the fish were of an inferior size. In the fall of 1919, the Board of Fish Commissioners removed practically all of the yellow perch from the Stevenson's Pond, and in the spring of 1920, made plantings of yellow perch fry from the selectively bred stock.

Today, this pond is noted for its large-sized perch; but time will be required for them to increase in numbers before the sportsmen can have real perch fishing. This experiment served to prove that it was not environmental conditions or lack of food that had originally produced the small fish in this pond, because the fry planted from the selectively bred stock grew to an exceptional size even though damage had been done to the natural food supply when the water was drawn off the pond for the removal of the small perch.

I might add that this pond covers approximately one hundred acres, and fortunately for this experiment, the Board of Fish Commissioners was able to drain the pond practically dry for the removal of the fish. Of course, the inferior strains of yellow perch cannot be removed from all Pennsylvania's perch waters, but in fish life, as the old saying goes: "It is the survival of the fittest."

It is hoped by the continual stocking with perch that grow to a large size, they will gradually replace the smaller strains. This has proved to be the case to a certain extent on Miller's Pond. The small strain of yellow perch planted in this pond in 1905, 1906, 1907 were not removed, but large plantings of selectively bred fish were made. Already, the fishermen are boasting of the increase in the size of the perch; and from observations made during the spawning seasons, the size of the strings of eggs is increasing yearly which denotes that the fish are of a greater size.

We have no information yet on what the result will be from the crossing of the smaller fish with the larger which is bound to take place; but we are of the opinion that the large specimens will gradually destroy the small ones.

Many of the warm water species of fish such as the black bass, catfish, and bluegill sunfish, are retained at the hatcheries until they have reached the length of one and one-half to four inches. Owing to the large number of yellow perch eggs hatched, it has been impossible to retain but a very small portion of them at the hatchery for any length of time, so the major portion of them are shipped out in the fry stage.



GATHERING YELLOW PERCH EGGS

At Pleasant Mount Hatchery, the spawning time of the yellow perch is usually the last two weeks of April, but this period will vary from a week to ten days, depending upon the weather conditions. Owing to the easy manner in which the eggs can be collected from the spawning beds and to the fact that the fish, by spawning in their natural way will fertilize more than 90 per cent of the eggs, no attempts have been made to take the eggs from the yellow perch by artificial extrusion and fertilization, as is done with the pike, white fish, cisco and trout. This is one instance in which nature's way cannot be improved upon by the fish culturists.

The egg of the yellow perch is the most remarkable egg handled at the State Hatchery. The egg is very small, measuring from thirty-two thousand to forty thousand to the quart. Instead of being extruded by the female singly in little streams, as is the case with most fish, the spawn of the yellow perch is in one piece. In shape, it is long and ribbon-like, arranged in folds, resembling the sides or bellows of an accordion. It is a partially transparent, light grey or yellowish mass, somewhat resembling a piece of old lace. The ribbon-like string is from two to six inches wide and from one and one-half to four feet long, depending upon the size of the fish laying the eggs.

In this mass, each egg is held in place by a delicate membrane, forming four walls about the egg, and holding the string together. The membranes are very porous, permitting a free circulation of water in and about the egg proper. The shape of the egg can be easily distinguished in this mass, as it will have a deeper shade than that of the wall of membrane surrounding it.

The eggs are arranged in the female in very compact folds. As spawning time approaches, they expand until her abdominal walls will become greatly enlarged and very soft to the touch. The enlargement will be very much out of shape. At this time the fish move in upon the spawning beds in large numbers, but very little spawning takes place at night or the middle of the day. It occurs mostly at daybreak or from four-thirty in the afternoon until darkness.

As the female is ready to spawn, the ribbon of eggs will protrude from her sufficiently to attach itself to aquatic plant life, brush, stones, or old logs. At this time she will be surrounded by many males. As the loose end of the ribbon attaches itself to the grass or some other object, she moves away, entwining the ribbon of eggs on the branches in such a manner that few of them settle to the bottom.

The spawning is accompanied by a great commotion in the water, caused by the males. This commotion attracts other ripe females, resulting oftentimes, in five or six strings of eggs being deposited on the same plant. After spawning the female deserts her eggs and moves out into deeper water, while the males seek other ripe females.

It is the opinion of the fish culturist that the wonderful percentage of fertilization is due to the number of males accompanying the female at spawning time. As soon as the eggs come in contact with the water, they expand about one-fourth, the milt of the male being present in the water, is sucked in through the pores, thus fertilizing the eggs. As the egg develops, both the eggs and membrane surrounding them, expand until at hatching time, the mass has almost

doubled its original size. The first expansion or the expansion at the time the eggs are fertilized, is quite rapid, but from this time on, it is very slow. This expansion causes the surrounding membranes to become very thin and delicate, consequently, by the time the little fish are ready to break through the shell of the egg proper, the surrounding membrane has become so thin, that the entire mass is broken up by the motion of the water releasing the egg, which then immediately hatches. By the time the ribbon or string of eggs is ready to hatch from its expansion, accompanied by the absorption of water, the mass will very nearly weigh as much as the mother perch herself, and in bulk will more than equal her size.

The brood perch are kept in three large ponds at the Pleasant Mount Hatchery. As the eggs are deposited on the natural spawning beds in these ponds, they are collected by a crew of trained men and taken to the hatchery. The eggs are gathered from row boats, the collectors carefully unwinding the string of eggs from about the brush or grass, and gently floating the mass into a small hand dip net, hence, transferring them on thoroughly moistened muslin trays, sixteen inches square and one inch deep.

About two quarts of eggs are placed on each tray. The trays are then placed, one upon the other, in especially constructed shipping cases, made to hold about eighteen trays of eggs. The shipping cases are provided with a space between the trays and sides of the box for insulation against heat and cold. This space is thoroughly filled with crushed ice and a chamber resting upon the top egg tray also filled with crushed ice. The eggs are then removed to the hatching house, a distance of several miles.

The work of collecting the eggs is kept up until all the batteries or incubators are filled to their utmost capacity, at the different state hatcheries. When the eggs are brought from the ponds, those not required for filling the home battery after replenishing the ice chambers are shipped to the other stations.



YELLOW PERCH AT SPAWNING TIME. NOTE DISTENDED ABDOMINAL WALLS OF FEMALE

Yellow perch eggs are hatched on a battery. A battery consists of a number of parallel troughs placed one above the other with a space between of about five inches. Each trough is fourteen inches wide and fourteen inches deep, the length of each trough and number of troughs high depending upon the number of jars to be used. At the Pleasant Mount Hatchery, there are two batteries, each six troughs high and thirty feet long with a capacity of four hundred

jars. While in use, a constant flow of water is kept moving through the troughs, the water intake being at one end of the top trough and flow from one to the other until the bottom trough is reached, hence the water is conducted in pipes to the fish storage tanks. About every twelve inches in the series of troughs, a one-half inch spigot is placed. Blow each spigot, and resting upon the next lower trough, is a small shelf, on this shelf under each spigot, a glass hatching jar is placed. The hatching jar is a cylindrical glass jar, fourteen inches high and six inches in diameter. The bottom of the jar is rounded in such a manner that the water striking the center of the bottom, will distribute the upward current of water equally in all directions. At the top of the jar is a small snout which, when the jar is in operation, extends well into the trough acting as an overflow.

The eggs are now removed from the shipping cases and by careful measurement, a certain number placed in each jar. The actual number of eggs placed in each jar will depend upon the age of the eggs when gathered, as allowance must always be made for the expansion. In order to get accurate measurement, no harm is done by separating the string of eggs in several places.

After the desired amount of eggs are in each jar, they are placed on the shelves directly under the spigots, the snout of the jars or overflows extending well into the troughs. A cylindrical one-half inch glass tube is then inserted in the jar with one end very near touching the center of the bottom of the jar, and the other end attached, by means of a short length of rubber tubing, to the spigot.



FEMALE PERCH AND EGGS JUST DEPOSITED. FOR COMPARISON, OBSERVE SIZE OF FISH AND SPAWN

Fishing for Everyone

By Kenneth A. Reid

Member, Board of Fish Commissioners

THE problem of furnishing decent fishing for the public in the thickly settled eastern states has become a very acute and complex one. With twenty fishermen today for every one twenty years ago, and with the available fishing water considerably reduced over the same period by pollution and other industrial activities, the demand today greatly exceeds the supply. Fishing, and the efforts to perpetuate and improve it, has become a big business, and as has been frequently pointed out: "Fishing, (and to a lesser extent, its companion sport of hunting), is the *only business* in America today in which the *demand exceeds the supply*." That being the case, it is deserving of a great deal more consideration than it gets. It is high time that the public revises its viewpoint regarding the real value of fishing in keeping with present day facts, so that when an issue arises involving a choice between fishing and some new industry whose operation will put an end to it, that fishing will not always come out second best. As a matter of fact in the great majority of cases, there would be no conflict if industry would give fishing any consideration.

Many reasons are gratuitously offered to account for the scarcity of fish today where they were abundant in the time of our fathers or grandfathers. Insufficient stocking, depredations by human violators, vermin, overfishing and others are frequently heard. The first two represent probably the most persistent cry from the majority of fishermen, and the third has been advanced by some real students of the problem as the most potent of all causes in the destruction of fish, particularly on our trout streams.

While there is no doubt but that mink, watersnakes, fish eating birds and other natural vermin make deplorable inroads on the fish in our trout streams and should be kept down as much as reasonably possible, I have never been able to bring myself to the belief held by some that the depredations of vermin annually exceed the total catch by all the fishermen. These vermin are not newcomers to our streams; they were here when the first white fisherman arrived, and in most cases, in much larger numbers than today—and so were the fish. Nor can I subscribe to the belief that the human violator is the chief factor in our problem. While not attempting to minimize his inroads or in any way condone them, he is no newcomer in the field. In fact, observance of the fish laws is very much more general today than it was a decade or two ago and violation of the fish laws is not the popular outdoor sport that it once was.

Simmering the problem down to its real fundamentals, we find two outstanding facts: 1. A greatly increased, and ever increasing, number of fishermen; 2. A greatly decreased mileage of fishing water. Result: fewer fish per fisherman. There simply is not enough mileage of fishing water to adequately sup-

ply the kind of fishing desired by the vast army of fishermen under existing conditions of management.

What can we do about it? Reduce the number of fishermen? Absurd, of course, entirely aside from the fact that it is their money from licenses that supports what fishing we enjoy. Stock more fish? Perhaps so in some waters, but in many streams where this demand is very insistent, more fish are now being planted than the water can adequately supply with food and suitable hiding places in its present condition. To stock more fish in such streams would merely encourage depredations from "vermin," both

The fishermen themselves can be a very potent factor in improving their own fishing. Most creel limits, some size limits and other regulations in most fish laws are hopelessly antiquated and totally out of keeping with the present supply and demand. Many real sportsmen have set the right example by establishing their own code of limits well within that permitted by law. Ten trout per day should be enough to satisfy any real sportsman, and many are satisfied to creel less than half that number of decent fish in the interest of perpetuating and improving the sport. Fortunately when you fish with the artificial fly, your sport need not be limited to the fish in your creel, for if the fish are in the stream and rising to your flies, you can catch and return them unharmed to your heart's content, enjoying all the sport and keeping perhaps three or four of the best ones. When the standard of sportsmanship amongst the great mass of fishermen is raised to the point where this practice is the rule, rather than the exception, there is no question but that fishing will be vastly improved.

But getting back to fundamentals, we need more water in which to fish. Right now we have the opportunity of a lifetime to get it if the Federal Government can be persuaded to include in the codes for those industries that pollute streams a provision that wherever practicable methods of treatment or disposal of polluting wastes is known, that these methods must be employed. Furthermore, under the terms of the National Recovery Act, "purification of streams" is listed as an approved public work, so that much existing pollution from municipalities and even abandoned industries could thereby be corrected. Pending the time when municipalities, industry and governmental agencies will recognize their responsibility to society in general in the matter of pure streams, let us take inventory of the fishing water that we now have and see what can be done about improving it.

Most of our fishing streams, even when not polluted at all, are far below their original condition in water supply, food, and cover for fish. Consequently, they are not capable of supporting the numbers of fish that they once did, even if we put them in. Almost without exception, these streams can be improved by man so that they will support many more and larger fish than at present, and some of them more than they ever supported. If we can't immediately reclaim a lot of needlessly polluted water for fishing, we can at least start improving the carrying capacity of the water we have. To my mind, with few exceptions, sportsmen's organizations could to much better advantage spend their time and money on stream improvement, rather than on amateur trout rearing projects. Doubling the carrying capacity of our existing stream



AN EVER-INCREASING NUMBER OF FISHERMEN

human and natural, and would prove a waste of the fisherman's money. And don't forget that it is this license money alone that supports most of our state fish commissions and even if every cent of it goes to this purpose that the average individual's annual license fee would pay for the raising by artificial means of only about one-third of the number of fish that he is legally permitted to take each and every day of the fishing season!



STREAM IMPROVEMENT IS A MAJOR CONSIDERATION FOR BETTER FISHING. HERE IS ONE OF THE HEWITT DAMS AT SPRING CREEK

mileage will furnish as much additional sport in fishing under proper management as doubling the mileage of water without improvement.

Stream improvement on anything but a limited scale on private waters is comparatively new. Mr. Edward R. Hewitt and the Michigan Conservation Commission in collaboration with the University of Michigan have done much valuable pioneer work along this line. In several other states, stream improvement is being studied or has already been started, for it is now pretty generally recognized by those who have made a careful study of the matter that artificial stocking in itself is not and cannot be the complete answer to the problem. More attention must be given to the streams—the homes for the fish—so that they will not only carry more mature fish per mile but will encourage these mature fish to spawn and reproduce.

Some of our streams are in such poor condition that natural reproduction of trout is negligible, and almost all trout streams are fished so heavily that some stocking is necessary. Intelligent stream improvement will partially rectify this condition, but many of our poorer streams would soon become fishless without continued artificial stocking. Our congested fishing conditions make it desirable to stock such waters that might not otherwise be considered.

A great impetus has been given the stream improvement program by the Federal authorization of this work as a part of the activities of the Civilian Conservation Camps. On the Pennsylvania State Forests and State Game Lands, this work has already been started under the direction of the Department of Forests and Waters. As a guide in the actual work, the Pennsylvania Board of Fish Commissioners has prepared a preliminary pamphlet of drawings and description. Lack of knowledge on how to proceed has re-

tarded this work in many cases, and it is expected that the general distribution of this information will do much to speed up the program along proper lines. In compiling these instructions, the board studied not only the few existing treatises on the subject, but also the actual improvements made on their own experimental stream in Centre County.

About a year ago the Board purchased the Spring Creek property, primarily for the purpose of constructing additional trout rearing ponds to be operated as an auxiliary to its Bellefonte Hatchery. The property embraces a mile and a half of main Spring Creek, the famous large trout stream that flows through the town of Bellefonte a few miles below. This stretch of water is being used by the Board as an "outdoor laboratory" for experimentation and study in stream improvement.

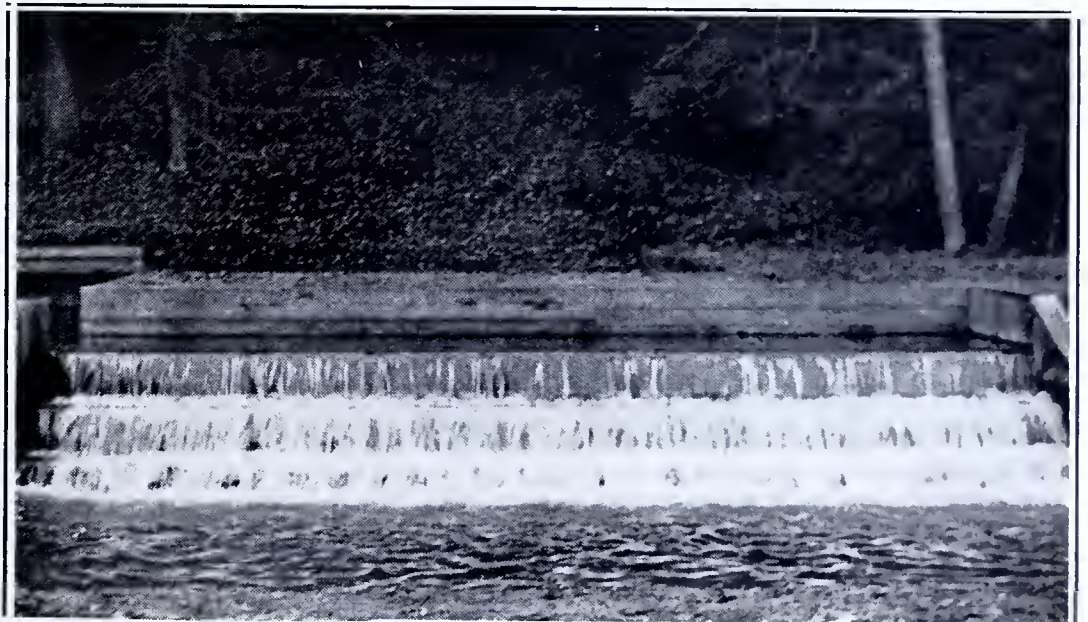
While Spring Creek has a splendid and unfailing supply of excellent water from the various big springs issuing from the limestone formation along its course, that part of it within the property was rather poorly supplied with good pools and good cover for large fish. Considerable stretches of it consisted of wide flat shallows with the water only a few inches deep, while at another point, an existing dam of some four or five feet backed up a long stretch of almost dead water. While the former provided much food and the latter much hiding as well as food, neither would be considered ideal water in its original state.

On the wide shallow stretches, the stream was narrowed and the current speeded up by building current deflectors out from the bank at an angle down stream. At another point, the bed was narrowed by constructing a cribbing out in the stream roughly parallel with the bank and filling in behind it with surplus earth excavated from the rearing ponds. At another point where the stream was split by a small island and most of the water flowed around on the meadow side, a current deflector will force the current down the other channel against the rocky base of the abrupt mountain and under the dense shade of several large hemlocks on that side. At various points, mid-stream V and T deflectors have been placed, and at others, artificial covers in the form of submerged log rafts are being installed.

In the almost dead water of the dam, rock wing walls built out alternately from either side at an angle downstream are sending a tortuous current winding down the center of this stretch and providing food and hiding that did not exist before. It has been very interesting and illuminating to compare the current through this slow stretch before and after the construction of the improvements.

The nature of the stream through the property with its low banks, comparatively gentle fall and remarkably uniform stage of water did not suggest the construction of a series of low dams such as would be most suitable for many swift mountain streams that run through narrow valleys. Never-

(Continued on Page 10)



THIS GREAT SPRING FEEDS MANY OF THE TROUT RAISING PONDS AT THE SPRING CREEK PROJECT

The Pike Perch In Pennsylvania

(Continued from Page 3)

beds. It is believed that while extreme cold will defer the spawning, the fish return later to deposit the eggs. C. R. Buller, Deputy Commissioner of Fisheries, says that he has never found an egg-bound female, or in other words, a female pike that had not deposited the eggs when in proper condition to do so. A great deal can be told about the life of a fish by observing places it seeks to deposit its eggs. Nature intended the pike-perch to inhabit clean bodies of water. Consequently, their eggs are scattered on rock, sand, or gravel bottoms. If the body of water they naturally inhabit had a muddy or riley bottom, these eggs would soon be covered with silt sufficient to smother them. Modern conditions have altered nature's scheme so radically on many of the tributaries suitable as spawning grounds for the pike, that it is believed many eggs deposited naturally are destroyed by silt carried by the rapidly fluctuating waters.

In early spring when the temperature rises, the adult fish, gathered at the mouths of the tributary streams by instinct, start their upward migration. Meanwhile, the rise in temperature melts the snow from the hill-sides once timbered with great trees. Rapidly melting snow soon raises the tributaries, and the pike-perch must buffet a heavy wall of water to move upstream. This the more active males succeed in doing, but the females, laden with spawn, soon tire, dropping back to more quiet water. Here frequently the eggs are deposited without sufficient males being present to fertilize them. Frequently in the swift current, eggs that have been properly fertilized farther upstream are washed into larger water areas and destroyed.

The delicate tissue of the pike-perch egg evidently does not carry on into the young fish. Once hatched, nature apparently provides the tiny pike-perch with an amazing stamina. So capable are they of caring for themselves, that real success has been achieved in stocking them while still in the fry stage. It is believed that the chief forage of the baby pike-perch during the first year are minute aquatic organisms and small particles of animal life washed into streams and lakes by heavy rains and the melting of the snow.

In recent years, the come-back of the pike-perch in Pennsylvania has been one of the most promising factors in the better fishing program.

GAMEY BULLHEADS

One of these days, it may be hard to convince the fishermen that the lowly bullhead does not deserve a game fish rating. Several incidents have been reported of taking them on artificial bait spinner, plug, and fly.

To confirm the suspicion relative to their striking qualities was an incident that occurred on a Wayne County lake last season. Duane Fatz recently reported that he caught a 14-inch bullhead last summer on a spinner. Two friends who accompanied him were inclined to believe the catching of this catfish accidental, until each of them duplicated Fatz's catch.

Fishing for Everyone

(Continued from Page 9)

theless two dams, one of logs and the other of rock and earth have been constructed, and possibly a few more may be put in. In order to aid the digging action of the water in forming a pool below, a narrow spillway has been constructed on one of these dams carrying the entire normal volume through this narrow opening. At two other points, quiet "winter holes" have been constructed by digging back into the bank with a steam shovel.

Although these improvements are comparatively new, most of them having been put in during the past summer, some gratifying results have already been noted. Within a few days after completion, large trout were noted at some of these improvements where none had stayed before. It is the intention of the Board to try out every type of stream improvement that can conceivably benefit this water and study and record the results carefully. From these records during the next few years, much data should be gleaned that will prove valuable in engineering other projects of stream improvement throughout the state and elsewhere. The records should remove much of the guesswork and surmise from this work.



A BLUEGILL POSES.
MANY OF THESE POPULAR FISH
WERE DISTRIBUTED IN
DECEMBER

DECEMBER DISTRIBUTION TOTALS 335,250 FISH

Brook and brown trout ranging in size from six to 12 inches featured the Fish Commission's distribution program during December, which marked the close of the autumn stocking program. Included in the distribution were 65,550 brook trout and 3,200 brown trout. The brownies averaged 12 inches in length.

Other species distributed were 149,000 bluegill sunfish fingerlings, 28,500 bullhead catfish, fingerling to adult, and 89,000 bullfrog tadpoles.

Following is a list of waters stocked in the various counties:

Adams—brook trout, Toms Creek, Little Marsh Creek, East Branch Antietam Creek.

Bedford—brook trout, Bobs Creek, Deamer Gap Run, Beaver Creek, Potter Creek, Three Springs Creek, Sherman Valley Run, Yellow Creek.

Berks—brook trout, Hay Creek, Indian Creek, Scott Run, Mill Creek, Back Creek, Pine Creek, Furnace Run, Mill Creek, Rock Run, Moslem Creek; catfish, Ontelaunce

Creek; frogs, Monocacy Creek, French Creek, Maiden Creek; sunfish, French Creek, Monocacy Creek, Ontelaunce Lake, Maiden Creek. **Bradford**—brook trout, Schroder Creek.

Bucks—brook trout, Beaver Run, Tinicum Creek, Cooks Creek; sunfish, Maple Beach Lake, Silver Lake, Queen Anns or Bendix Creek, Brock Creek; frogs, Brock Creek, Queen Anns or Bendix Creek, Silver Lake, Maple Beach Lake; catfish, Maple Beach Lake, Silver Lake, Queen Anns or Bendix Creek, Brock Creek.

Cambria—brook trout, Big Laurel Run.

Cameron—brook trout, Hicks Run, Sinnemahoning Portage Creek, Hunts Run, Wykoff Run, Lick Island Run, North Creek.

Carbon—frogs, Lesley Run.

Centre—brook trout, Laurel Run, Big Sandy Run, Little Fishing Creek, Pine Creek, Wallance Run, Roaring Run, Marsh Creek, West Branch Big Run, White Deer Creek, Fields Run, Yost Run, Wolf Run, Winklebeck Run or Witmer Run, Cedar Creek; frogs, catfish, and sunfish, Cold Stream Dam.

Chester—brook trout, Valley Creek, White Clay Creek, Waln Run, Chester Creek; frogs and sunfish, East Branch Brandywine Creek.

Clearfield—brook trout, West Branch Montgomery Creek, Bell Run, Anderson Creek.

Clinton—brook trout, Chatham Run, Cedar Run, Cooks Run, Right Branch Young Womans Creek, Lick Run, Big Run, West Branch Young Womans Creek, Big Fishing Creek.

Columbia—brook trout, East Branch Fishing Creek, West Branch Fishing Creek, Lick Run or Deer Lick Run.

Cumberland—brook trout, Big Spring Creek.

Dauphin—brook trout, Clarks Creek.

Fayette—brook trout, Markelton Run, Big Sandy Creek, Big Meadow Run.

Fulton—brook trout, Brush Creek, Little Brush Creek, South Brush Creek.

Huntingdon—brook trout, East Branch Standing Stone Creek, Standing Stone Creek, Little Trough Creek, Tatman Run, Black Log Creek, Barree Run.

Indiana—brook trout, Brush Creek, South Branch Twolick Creek.

Jefferson—brook trout, East Branch Mahoning Creek, Little Sandy Creek, Big Run.

Juniata—brook trout, Lost Creek, Willow Run; sunfish, catfish, and frogs, Buffalo Creek, Lost Creek.

Lancaster—sunfish, Conowingo Dam, Octoraro Creek, Mill Creek, Hammer Creek, Cocalico Creek, Holtwood Dam, Safe Harbor Dam; frogs, Conowingo Dam, Holtwood Dam, Hammer Creek, Cocalico Creek, Mill Creek, Octoraro Creek; catfish, Octoraro Creek, Cocalico Creek, Hammer Creek, Mill Creek, Conowingo Dam.

Lebanon—brook trout, Hammer Creek, West Branch Hammer Creek, Evening Branch or Gold Mine Run, Snitz Creek.

Lehigh—sunfish and catfish, Rockdale Dam on Rockdale Creek, Orn Rod Mine Hole.

Luzerne—frogs, Ice Lake.

Lycoming—brown trout, Loyalsock Creek; brook trout, Hogland Run, Roaring Branch, White Deer Hole Creek.

McKean—brook trout, Portage Creek, Potato Creek, Two Mile Run.

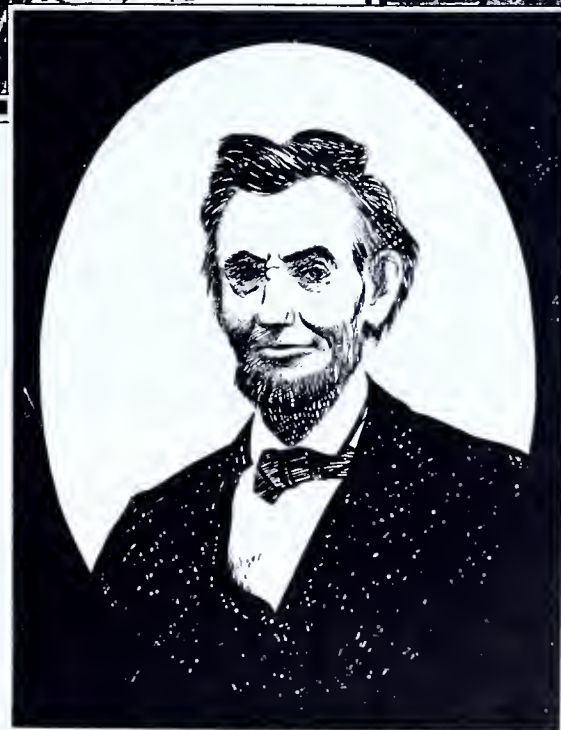
Mifflin—brook trout, Havice Creek.

Montgomery—sunfish, Northeast Branch Perkiomen Creek, Perkiomen Creek, Skip-



Russell H. Conwell, in his book, "Why Lincoln Laughed," published by Harpers, New York, tells the following anecdote concerning Abraham Lincoln. It should be of interest to fishermen: "He tells me that twelve thousand of Lee's soldiers have just been captured. But that doesn't mean anything; he's the biggest liar in Washington. You can't believe a word he says. He reminds me of an old fisherman I used to know who got such a reputation for stretching the truth that he bought a pair of scales and insisted on weighing every fish in the presence of witnesses.

"One day a baby was born next door, and the doctor borrowed the fisherman's scales to weigh the baby. It weighed forty-seven pounds!"



pack Creek, Swamp Creek, Pennypack Creek, Huntingdon Valley or Pine Creek; frogs, Skippack Creek, Northeast Branch Perkiomen Creek; catfish, Swamp Creek, Pennypack Creek, Huntingdon Valley or Pine Creek.

Northampton—brook trout, Bushkill Creek, Monocacy Creek; catfish, frogs, and sunfish, Jacobus or Jacoby Creek.

Perry—brook trout, Shermans Creek, Montour Run, McCabes Run or Canadas Valley Run; catfish, sunfish and frogs, Cocolamus Creek.

Pike—frogs, Pecks Pond.

Potter—brook trout, First Fork Sinnemahoning Creek.

Schuylkill—brook trout, Evening Branch or Gold Mine Run, Little Catawissa Creek,

Black Creek, Pine Creek, tributary to Little Schuylkill River, Pine Creek, tributary to Mahantongo Creek, Beaver Creek, Wolf Creek, tributary to West Branch Schuylkill River, Wolf Creek, tributary to Mill Creek.

Somerset—brown trout, Laurel Hill Creek; brook trout, South Fork or Bennis Creek, Beaver Dam Run, Drakes Run, Iser Run.

Sullivan—brown trout, Loyalsock Creek; brook trout, East Branch Fishing Creek, West Branch Fishing Creek, Rocky Run, Lick Creek.

Tioga—brook trout, Kettle Creek, Phoenix Run, Asaph Run.

Union—brook trout, North Branch Buffalo Creek.

Westmoreland—brook trout, Furnace Run or McGinnes Run.

Watersnake Drive

The Big Elm Rod and Gun Club in Tioga County conducted an intensive drive against watersnakes and kingfishers on Seeley Creek and its tributaries this summer. Their efforts were rewarded by a heavy kill in these predators of fish.

Trout apparently know who befriends them. During a campaign in which boys participated to thin down watersnakes, Merle Daggett, who lives in Tioga County, killed the largest number of snakes reported in the campaign. After the trout season had opened, Merle recorded the largest number of trout taken on Seeley Creek and its tributaries by boys this year.



HERE ^{A_ND} THERE IN ANGLERDOM



The Little Aughwick, one of the ace trout streams of Fulton County, yielded two record brook trout last season, according to Clarence Naugle, of Burnt Cabins. Naugle reported having caught one brookie measuring 18 inches. The largest brown trout he caught measured 20 inches. Wilmer Shore of Burnt Cabins, had the distinction of landing the largest brook trout taken on the Little Aughwick last year. His record brookie measured 20 inches, was beautifully marked and heavy in girth. The catches were made on live bait.

Naugle, by the way, stands firm in the belief that the big one generally gets away. While fishing in Allen Valley two years ago, he came upon a deep pool where the stream split in two sections about a mass of tree roots. As his bait drifted toward the tree roots, a giant brook trout surged at it. Following the strike, he said, it swung sharply toward the shelter of the roots, and when he attempted to turn it, broke a line having an 18-pound test.

Sucker fishing is yielding some splendid catches in Indian Lake, near Fannettsburg, Franklin county, according to a recent report. Apparently another great sucker fishing year is in prospect on this water which last year offered exceptional winter fishing.

First prize in the fishing contest staged by the Lappawinzo Fish and Game Protective Association of Northampton for the largest wall-eyed pike taken in 1933 was awarded to Joe Andrews of Cementon. Andrews' catch, weighing 10 pounds, four ounces, was taken in the Delaware. Morris Smith, Northampton, caught the largest largemouth bass, Lake Teddyuscong, Pike county; Ernest Benninger, Bethlehem, the biggest pickerel, Lake Wallenpaupack; R. H. Lentz, Treichler, the largest brook trout entered, Indian Creek, Northampton county; Edwin Schoeneberger, Northampton, the largest brown trout, Little Lehigh, Lehigh County, and Ernest Benninger, Bethlehem, the largest bluegill sunfish, Saylor's Lake, Monroe County. Results of the contest were reported by C. H. Fulmer, Secretary of the Association.

Clarence "Beanie" Miller of Mifflinburg scored some fine catches of smallmouth bass on Penn's Creek during the autumn, according to Warden Art Snyder. His largest bass measured 19 inches in length. Ten nice bass were taken during a morning's fishing on the creek by Dr. Ralph Litzel of Mifflinburg.

MUSKIES AND DUCKS TAKEN SAME DAY

Combining fishing and duck hunting just about tops any sportsman's day on the water, according to Henry Boyle. And Sam Harned will back him. Special Warden Joe Cannon reports that Conneaut Lake offered real variety for autumn fishermen, and hunting in the bargain, last season.

Boyle's "creel" for one day consisted of a 40-inch muskellunge, weighing 15 pounds, a five-pound wall-eyed pike, a three-pound wall-eye, and three ducks. Harned, in addition to bringing down two ducks, caught a 35-inch "water tiger" weighing 10 pounds. Both fishermen live at the lake.

President Eddy on the Allegheny River was a favorite bass fishing pool for fishermen last season according to Warden J. H. Hall of Seneca. During a day's fishing, Charley Ebbinger and Gus Swasky of Oil City caught five smallmouth bass, three of them each measuring 19 inches, and two 16 inches.

The lower waters of Pine Creek ranked high as producers of smallmouth bass, writes Warden J. H. Bressler of Williamsport. Ralph Bastian, Williamsport, caught a smallmouth, 19½ inches in length that weighed three pounds at Camp Kline. Dick Morin of Williamsport topped this catch when he landed a 19½ inch smallmouth weighing three and one-half pounds.

Many rock bass and crappies were taken on the Allegheny.

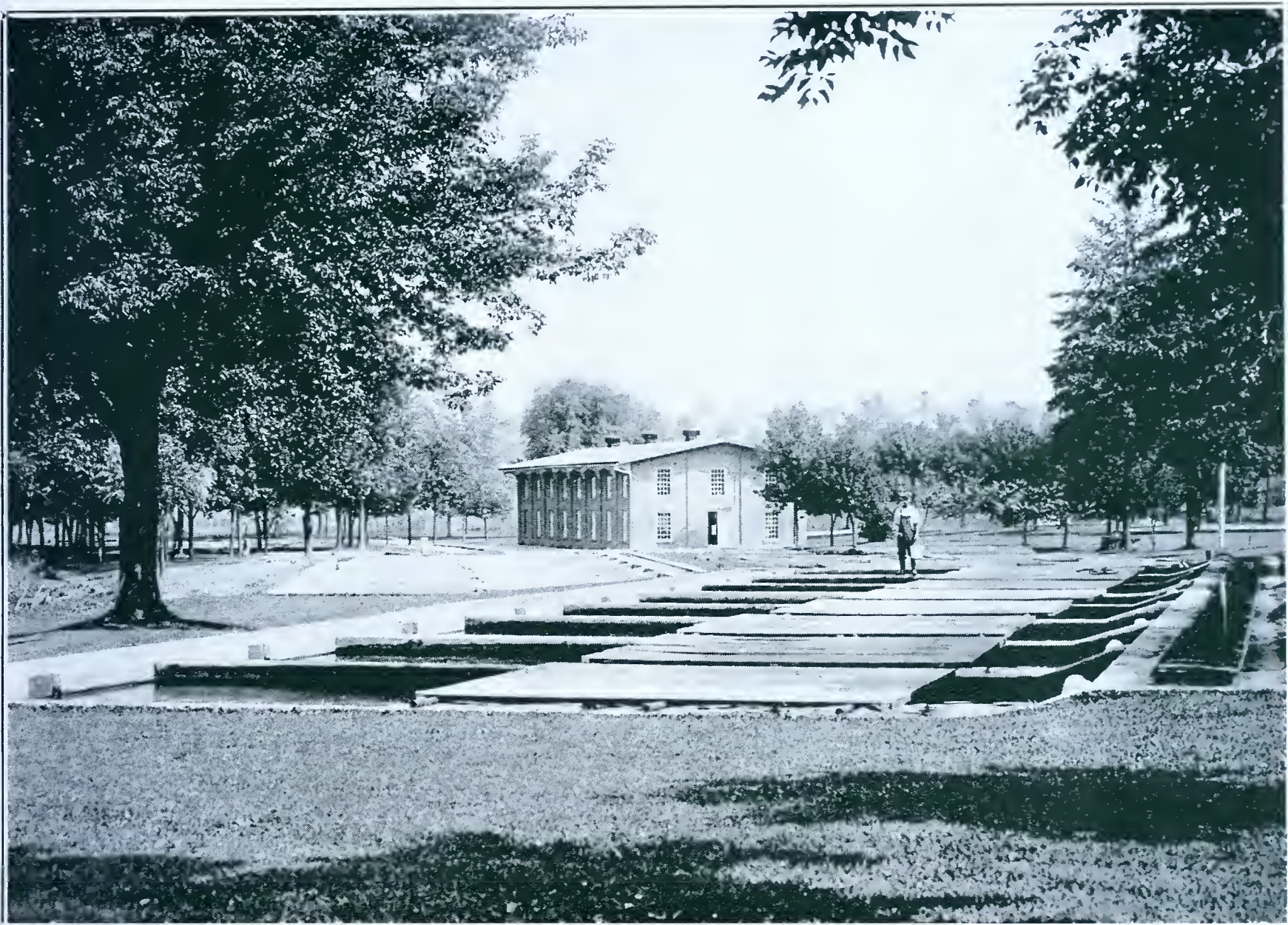


PERKIOMEN CREEK BASS AND THE ANGLERS WHO CAUGHT 'EM. LEFT TO RIGHT—ELMO VANDERCUFFLER, PAUL FRANKHEISER, AND PAUL HUNSBERGER FROM GILBERTSVILLE. LAMAR MUMBAUER SNAPPED THE PICTURE

Included in the muskie catches on Conneaut Lake, writes Warden Joe Cannon, was a 16-pound "water tiger" taken by Mr. Montgomery. Rev. Bohlender of Conneaut Lake landed two wall-eyed pike weighing three and four pounds respectively.

French Creek provided great wall-eyed pike fishing during 1933.

Calico bass were taken consistently on the Raystown Branch of the Juniata during the autumn, writes Warden Link Lender of Bellwood. Mrs. Lawrence Hite of Altoona, an enthusiastic disciple of Izaak Walton, caught eight "calicoes" measuring from eight to 15½ inches. Harold Hite of Altoona caught a "calico" measuring 15½ inches. These catches were made in the Penn Central Dam.



Main Hatchery Building and Some of the Trout Ponds at Bellefonte Hatchery, Centre County

This hatchery is devoted entirely to raising brook and brown trout, and is a heavy producer of the “speckled kings.” The man with the “feed bucket,” by the way, is very popular with the fast-growing trout in Bellefonte’s ponds.

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September 22, 1784

*“My fishing lines are
in the Canteens”*

PENNSYLVANIA ANGLER



A N N U A L T R O U T N U M B E R



FROM PAINTING BY JOHN BECK, WILLIAMSPORT

A BROOK TROUT RISES

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NO. 3

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BOARD OF FISH COMMISSIONERS

MARCH
1934

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NOTE

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PENNSYLVANIA ANGLER

MARCH, 1934

VOL. 3

No. 3

EDITORIAL

Anglers Hold Key to Better Trout Fishing

Trout fishing days are red letter days for the anglers of Pennsylvania, and from present indications, I believe that 1934 will rank as one of the greatest trout fishing years in the past decade. The hatcheries have been operating at the peak of their capacity, releasing brook and brown trout above legal size to suitable waters. Hundreds of thousands of trout were planted during the autumn stocking program; another vast stocking program, distribution of many additional thousands of legal size fish is now under way and waters are at good levels to insure effective stocking. By April 16, opening day of the season, our spring stocking program should be practically completed.

The future of this great sport of trout fishing, however, cannot be based entirely on the mass production of our hatcheries. Trout distributed are the property of the licensed anglers of Pennsylvania. Their license money has built a system of modern hatcheries, second to none in the world. It has placed Pennsylvania, a great industrial Commonwealth, in the front ranks of the best

trout fishing states in the Union. I sincerely believe that good sportsmanship on the part of our anglers will, during the next ten years, play a part as vital as that of hatchery production in providing a maximum of good fishing. Backed whole-heartedly by fishermen who think not only of catches but of the conservation of trout, our production program will become doubly effective. No great conservation movement can succeed to the utmost unless it has solid backing from the sportsmen themselves.



We are entering a new era in fish conservation. With general adoption of codes to shorten the working week, more leisure time is available for the average individual. Never before has the call of our streams and hunting covers been so enticing. Thousands of Pennsylvanians who formerly had little time to fish or hunt may now look forward to many happy hours on our fishing waters this season. This means that our fish production program must be expanded to meet a constantly increasing demand. It also means that in every possible way, available fishing waters must be improved to bring them to their production peak. Our fishermen have already played an important part in stream improvement, and this year even greater progress should be made in this commendable work. More water in which to fish is also essential; the giant Pymatuning reservoir in northwestern Pennsylvania and a number of other water impounding projects now under way should go far toward achieving this objective.



Pennsylvania's anglers are the key-men in the better fishing program. When our trout fishermen invade mountain and meadow streams on the opening day, good sportsmanship is of first consequence. Remember that every trout under legal size, if returned carefully to the water when only slightly injured, will help next year's fishing on any stream. Conserving the little fellows is a necessary step in betterment of trout fishing. In line with this thought, the fishing of small feeder trout streams,

particularly if they are tributaries to larger waters often results in the loss of many fingerlings. A tiny spring run frequently may have many young trout in its pools, and few fish over legal six-inch size. If, in taking one trout over six inches, a fisherman must hook and return to the water ten under-size fish, heavy loss of trout for the next year's crop must result. Under the new fingerling distribution plan, probably many feeder streams will be stocked by sportsmen. Given a proper chance to grow, these fingerlings may be a big factor in the future of our trout fishing.



Trout fishermen each year are turning in increasing numbers to fly-fishing. This splendid sport, the greatest art in fishing, has strong appeal for the sportsman. The surging rise of a brook or a brown trout to a deftly-cast fly brings a thrill for the angler second to none. And in fly-fishing, particularly fishing with the barbless fly, trout under six inches may be returned after being caught with little injury to the fish. I believe that fly-fishing is one of the best conservation methods at the disposal of our fishermen. To convert any fly into a barbless, the only thing necessary is to bend the barb flat with a pair of pliers. In barbless fishing, a small trout may often be released without being taken from the water. Almost invariably, trout caught on artificial flies are hooked only in the jaw, while when taken on live bait, the lure is sometimes swallowed, resulting in mortal injury to the fish.



The day is fast passing when fishermen boast of catching the "limit." Rather, they are inclined to take larger fish and fewer of them, realizing that trout returned to the water will be there again for them to catch. This is the true spirit of sportsmanship, a factor that will weigh heavily in the balance in favor of good trout fishing during the next ten years.

Commissioner of Fisheries.

Trout Streams of the North Tier

Editor's Note: This is the first of a series of articles on outstanding trout waters of Pennsylvania.

FAST water—rushing through narrow gorges, merging into wider riffles and then into deep, dark pools, cutting its way beneath overhanging ledges of rock and brush-bordered banks—is stamped in the memory of anglers who have fished the famous trout streams of Pennsylvania's north tier counties, Potter and Tioga.

Here in a wilderness setting are streams that may truly be termed an answer to those dreams of perfect trout days; producers of fighting brook and brown trout that rise in a surge of mottled green and red or golden brown to the jauntily floating fly. Fast-water trout, these, buffeting a current that has a fall of from 30 to 40 feet to the mile. When a big brown trout strikes in Pine Creek's rapid current, or one of those dark, brilliantly-marked brookies of the gorge in Four Mile Run's waterfall-churned courses flashes to the lure, a vivid recollection of the incident is treasured by the angler. And linked inseparably with the great trout streams of the north tier is an atmosphere of natural beauty unsurpassed in Pennsylvania.

North tier streams offer unusual variety for the fisherman. If an angler prefers to find his sport on swift mountain brooks, a network of these waters are available. Should he desire to try his luck for trout on the larger streams, Pine Creek, Kettle Creek, Cross Fork Creek, Cedar Run and the upper reaches of Slate Run rank as ace trout waters. On many of the streams in this territory, particularly in Tioga County, their courses cover not only woodland but occasional mountain meadows and abandoned fields.

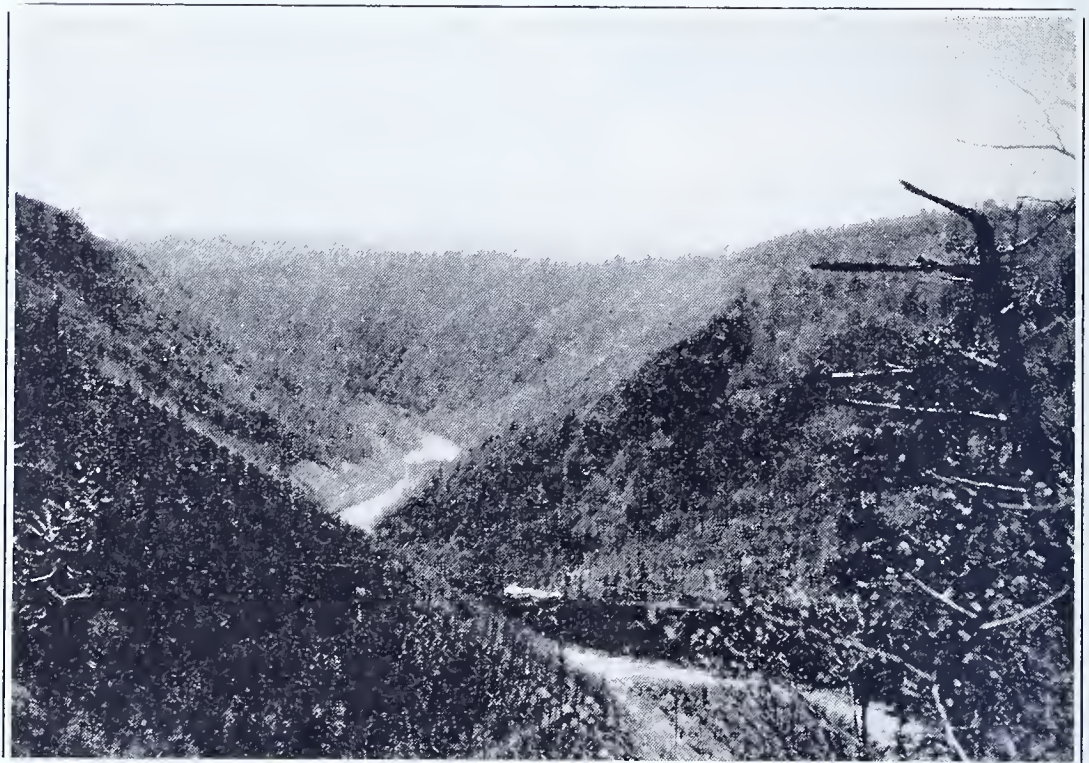
Favorite Lures

To cover in a comprehensive way all of the trout flies that are regarded as highly effective on certain waters of the north tier is, of course, impossible in the limited space available. One fly fisherman generally has a "pet" among the tiny feathered lures in his fly book that he relies upon to take fish when all others have failed. Another may base confidence in an entirely different fly. On certain streams, the Royal Coachman may occupy top rank; on others, the most effective killer may be the Ginger Quill.

"An old-time favorite on the West Branch



WEST BRANCH OF PINE CREEK



COURTESY SHUMWAY STUDIO, WELLSBORO

PINE CREEK AT THE HEAD OF THE GORGE

of Pine Creek," writes Warden Horace P. Boyden of Wellsboro, Tioga County, "is the Golden Spinner, and the different quills, especially the light wing Ginger Quill are also good flies in these waters. Local brown trout fishermen make a golden-bodied fly with dark brown and yellow-mottled wings that is certainly a killer. I don't think it has a name. On Nine Mile Run and Brookland Run, the Willow is a good fly during May and is usually a killer on most of our meadow streams."

Warden Dewey Grant of Galeton, Potter County, writes: "Flies that are on the water in early season are usually the dark flies, browns and grays like the March Brown, Cowdung, Alder or other brown and gray flies of like color. After the first of May, flies are the most effective lures on our Potter County waters."

The bait fisherman usually scores during April on north tier waters. At that time, the streams are frequently high from melting snow and ice on the mountain slopes and cold spring rains. In this low temperature water, the angleworm is a favorite bait. On opening day, it is not unusual to find a wide variety of bait being used, including red worms, night crawlers, grubs, minnows, flies, and even salmon eggs. When the water warms and stream levels drop, the first hatches of flies rise to the surface. Then fly fishermen find rare sport on north tier waters.

Potter County Streams

Pine Creek in Potter County is one of the outstanding trout streams in Pennsylvania. Its swift current and deep pools, many of them overshadowed by rock ledges, harbor not only giant brown trout in the lower reaches but fine brook trout near the headwaters. Broad stretches of riffle and deep

water, fringed by willow and brush, provide varied fishing for the angler. In early season, however, the current is so strong in the larger stream below Galeton that it is impractical to fish it. From Galeton to Walton, the stream is smaller and may generally be fished in April. Above Galeton, at Walton, Pine Creek branches, one of the branches being known as Nine Mile Run, the other as Cushing Creek or Brookland Branch. Cushing Creek affords fine fishing over about five miles of its course, although it is somewhat brushy. Highway route 449 follows this valley over the entire length of the stream.

Nine Mile Run, heavily bordered by brush and willows, is followed by route six. A number of large beaver dams have been built on this stream. Entering Pine Creek at Galeton is the West Branch of Pine Creek, a stream having about 16 miles of good trout water. Formerly only about 11 miles of the West Branch was accessible by road, but a good trail built by the C.C.C. camp at Corbett now follows it to the headwaters.

Flowing into the West Branch about six miles above Galeton is Lyman Run, with a stream length of about 11 miles. For a distance of about seven miles, Lyman Run is accessible by road. Its upper stretches, brushy and having many beaver dams, may be fished only by walking.

Another favorite trout stream in Potter County is Kettle Creek, which may be reached from Galeton over routes 144 and 44 at Oleona and Cross Fork, or over route 873 out of Renovo. Route 873 crosses the lower waters of Kettle Creek near Hammersley Fork. Kettle Creek offers not only 30 miles of trout water on the main stream, but has numerous fine tributaries along its

course. It differs from a number of other Potter County waters in that it has available more deep pools. Its watershed is timbered with second growth forest and near the headwaters it is very brushy. From a point near Oleona where route 44 crosses Kettle Creek, the stream is not accessible by road for a distance of four miles. Four miles above route 44's crossing, another road spans it near the juncture of Germania Branch. For another interval of four miles, the stream is not accessible by road. From this point, known as Slider's Dam, a road follows Kettle Creek to the headwaters.

Cross Fork Creek also ranks well as a trout stream, providing about 12 miles of good fishing above its point of juncture with Kettle Creek at Cross Fork. The stream, fringed by brush and willows, is followed by a road, and has two good tributary waters.

To fish Hammersley Fork, a stream regarded as one of the best in Potter County, follow route 873 from either Renovo or Cross Fork. This road crosses the stream at a point about five miles below Cross Fork. A new road follows Hammersley for a distance of three miles upstream to where it branches. Trails recently constructed by a C.C.C. camp follow the right branch and the Bell branch. Fifteen miles of secluded trout waters on the Hammersley yield fine creels of the speckled beauties to anglers each season.

The East Fork of the Sinnemahoning is another stream having strong appeal for the trout fisherman. It is accessible from either Wharton or Conrad and is about 15 miles in length. The upper waters of the Allegheny River, reached from Coudersport, offer good brown trout fishing. Willows predominate in the growth along its shores. Its drainage area covers not only some wood-

land, but also cultivated land, and owing to this fact, hard rains usually result in high and murky water. Even when the water is murky, however, brown trout and some real old-timers at that, are taken.

Trout Streams in Tioga

Tioga County trout waters rival in many respects the splendid streams in Potter County. Their drainage areas are somewhat similar, as are stream characteristics. A number of Tioga streams are swift-flowing, swirling through timbered areas, then emerging into open meadowland. For the fly fisherman, they afford just that touch of variety necessary to keen enjoyment of his art.

Ranking as major streams are Pine Creek, Phoenix Run, Asaph Run, Cedar Run, the Tioga River, Slate Run, and Kettle Creek, which heads in Tioga County nine miles west of Watrous. Of these streams, Phoenix Run, Long Run, and Asaph Run are easily accessible early in the season and provide great fishing. Phoenix Run crosses highway route six at a point two miles below Galeton, flows almost entirely through State forest and is a splendid brook trout stream. At Gaines, route six crosses Long Run, a meadow stream furnishing good brook trout fishing. Asaph Run is a tributary to Marsh Creek. It is a stream flowing through forest land, and has its point of juncture with Marsh Creek at Asaph, eight miles from Wellsboro.

Pine Creek in Tioga County is a picturesque stream, having 13 miles of good trout water from Ansonia to the Potter County line. Early season fishing on this stream, however, is usually not practical owing to high water. The Tiadighton Gorge, formed by Pine Creek, is one of the outstanding scenic views in Pennsylvania. At places in

the gorge, the towering cliffs on either side are so sheer that it has been said that not even a deer may scale them. Only when the water is low may this section of the stream be fished, and even then considerable risk must be taken by the angler.

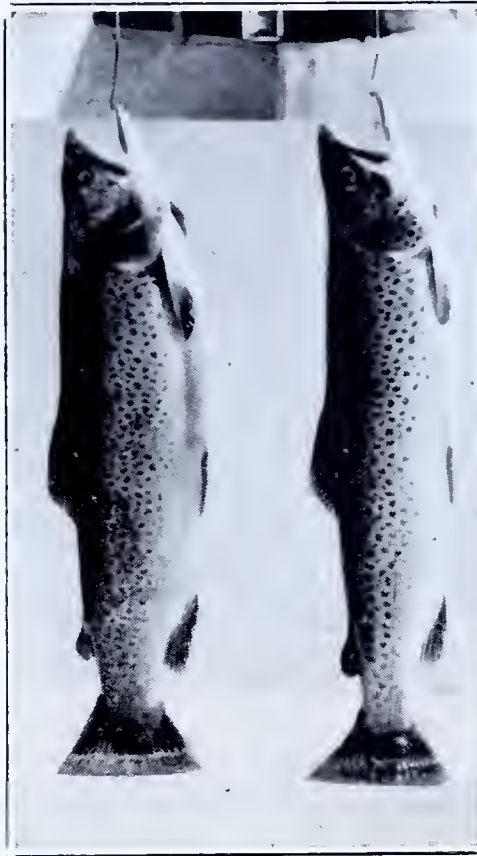
Cedar Run, a forest stream of low temperature water, flows into Pine Creek at Cedar Run. Deep pools, in which brown trout are lurking, lure the angler to its lower waters, while near the headwaters good catches of brook trout are made.

On Kettle Creek are numerous old splash dams and beaver dams. In its wide pools are found some of the largest brook trout in Tioga waters, and great fish stories have their origin on this beautiful stream.

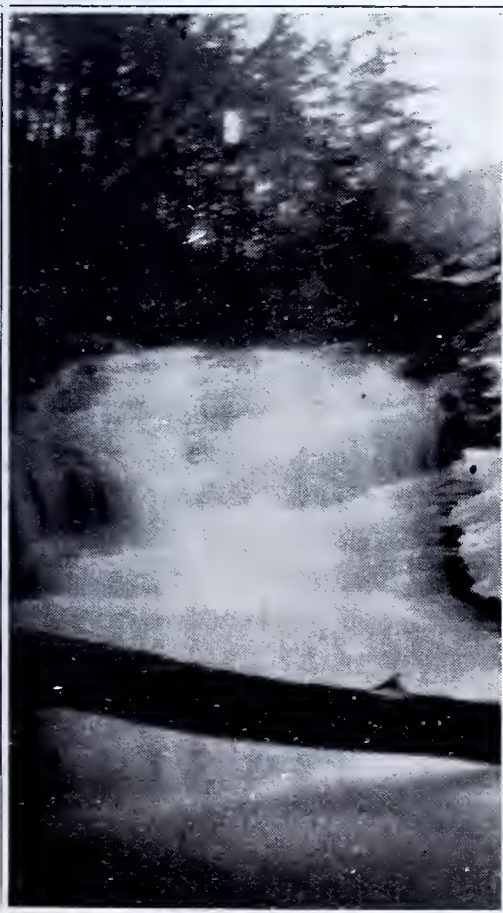
Of the smaller streams, Mill Run and Four Mile Run have unusual scenic beauty. Mill Run, a brook trout stream, is famous for the Mill Run Glen, while on Four Mile, with its magnificent gorge, the deep coloration of brook trout is a favorite topic of conversation with Tioga fishermen. Rumor has it that there's a giant brookie, far up in Four Mile Gorge where light seldom penetrates, of breath-taking proportions. Four Mile Run may be reached from Rexford over a new forest road.

For later season trouting, the Tioga River above Blossburg is a good stream. Its water course is through a fine stand of timber, another appealing angle to the fisherman. Slate Run, one of the outstanding brown trout streams in Pennsylvania, had many giant brownies on its spawning beds last autumn, and should again occupy top rank from the angle of catches this year.

For the trout fisherman who likes to find his sport in remote mountain valleys, or where the surge of the current breaks heavily against his hip boots, the streams of the north tier hold an irresistible appeal.



A BRACE OF BROWN TROUT
FROM THE UPPER ALLEGHENY
NEAR COUDERSPORT



FOUR MILE RUN



CEDAR RUN



APPEALING TROUT WATER. BUT THE "NO TRESPASS" SIGN ALTERS THE PICTURE

SPORTSMEN'S FEDERATION PLANS ACTIVE PROGRAM

Meeting in Harrisburg on February 12, the Pennsylvania Federation of Sportsmen's Clubs, representing 400,000 organized sportsmen in this state, formulated an exceptionally fine program for the advancement of conservation of fish and game. Delegates from 250 sportsmen's organizations were present at the meeting. Active support of the conservation movement from the sportsmen is a vital factor to its success, and the Federation is forging steadily ahead in achieving this commendable objective.

Several changes in the by-laws of the Federation were adopted at the convention. Five divisions were created—northeast, northwest, central, southeast, and southwest. A chairman and a vice-chairman will be elected by affiliated clubs in each division. These division heads automatically become members of the Federation's Board of Directors. Affiliated clubs in each of the 67 counties will have the privilege of electing one delegate to the representative body of 67 delegates for the entire state. It was ruled that conventions are to be conducted on an open forum basis with the privilege of attendance and the floor to any individual or to organized sportsmen in the state. In voting on a question, an accredited delegate can demand a vote by delegates only, otherwise all the sportsmen present may vote. Annual dues amounting to three cents a member are to be paid by clubs affiliated with the Federation.

A significant fact in the formation of this powerful sportsmen's organization in Pennsylvania is its rapid growth and the enthusiasm with which it is backed. Its development looms as an outstanding forward stride in the drive for better fishing and hunting.

Of particular interest to fishermen was a determined onslaught against pollution by the Federation. Approval was given the Fish Commission's plan to stock fingerling trout in addition to the stocking of legal size trout in Pennsylvania. Fishing on Sunday was opposed by the Federation by a vote of 64 to 51. The Federation favored re-introduction of a bill introduced at the 1933 legis-

lative session which would make a number of drastic changes in the Fish Code.

Grover C. Ladner, Philadelphia, was elected president of the Federation; W. E. Hughes, Oil City, vice-president, and Dr. C. A. Mortimer, Wilkes-Barre, secretary-treasurer.

WHERE THE CAHILL FLY IS A KILLER

Chauncey Logue, expert trapper for the Game Commission, gets a real kick out of fly-fishing for trout. Cameron County, where Chauncey lives, boasts some of the finest trout waters in Pennsylvania, including the Sinnemahoning Creek, Sinnemahoning Portage Creek, Bennetts Branch of Sinnemahoning Creek, and Driftwood Branch of the Sinnemahoning.

In discussing flies that rank as killers on the Sinnemahoning and its branches, Logue said that in early season, the Cowdung occupies high rank. Later in the season, the White Winged Coachman takes its share of the speckled kings. He was emphatic, however, in saying that the Cahill ranks as an ace fly in these waters. While fishing Slate Run, that famous brown trout stream of Tioga and Lycoming Counties, Chauncey said he made a fine catch of brownies on the Cahill, and hooked a number of giant trout that broke away.

RAISE FUNDS FOR COLUMBUS DAM

Enthusiastic support for the Columbus Dam project from citizens in Warren County, is reported by Warden R. C. Bailey, of Youngsville. Repairs to the dam, which is located on the Brokenstraw Creek near the town of Columbus, will be made under the Civil Works Program. Funds for the purchase of material, however, have been raised by public subscription and total almost \$5,000. When completed, this fine water area is expected to rank with the best fishing areas in northwestern Pennsylvania. Public zeal in backing it is a promising sign in the rapid development of conservation interest throughout the Commonwealth.

Creek Chub Caught in Muskrat Trap

Chubs and other species of the minnow family not only annoy fly fishermen when spring is in the air, but even in winter when the trapper makes his rounds, occasionally upset trapping plans. Alex Billmeyer, youthful trapper of Washingtonville, Montour County, recently visited one of his steel traps that had been set in the under-water entrance to a muskrat den. The trap had been sprung, and firmly caught in it was a large chub, over seven inches in length.

On the same trip, he found a big snapping turtle calmly dozing away in the mud bottom of the stream. The turtle was captured and its hibernation "sleep" came to an unseemly end.

REPORT SUCCESS IN ANTI-TRESPASS DRIVE

At an enthusiastic meeting of the Monroe-Pike Sportsmen's Association, in Stroudsburg, recently, Harry P. Custard, Chairman of the Fish Committee of the Association, reported outstanding success in the drive against posted lands.

Through its efforts to bring about cooperation between sportsmen and landowners in Monroe County, Mr. Custard said, twenty miles of fine trout waters have again been thrown open to the public for fishing.

GEORGE E. GILCHRIST NEW BOARD MEMBER

Governor Pinchot recently appointed George E. Gilchrist of Lake Como, Wayne County, to the Board of Fish Commissioners. Mr. Gilchrist succeeds the late Mathew A. Riley, of Ellwood City. An ardent angler, he owns one of the finest fishing lakes in northeastern Pennsylvania, Lake Como, where he conducts a summer resort. He is a member of the Hotelmen's Association, many members of which conduct hotels catering to sportsmen and tourists, and his appointment to the Board met with enthusiastic approval not only from members of the Association but from sportsmen in northeastern Pennsylvania.

Living as he does in a section of the Commonwealth famous for its fishing, Mr. Gilchrist represents an important area from a conservation standpoint. Not only is fishing a favorite sport in northeastern counties, but the sportsmen are highly organized and enthusiastic advocates of conservation.

Mr. Gilchrist was a member of the Pennsylvania House of Representatives in 1923 and 1925, and while a member served on the Fish and Game Committees of the House.

DISTRIBUTE POSTERS

The Clinton County Fish and Game Association is waging an aggressive campaign against posted lands this year. Recently it was announced that landowners who desire to post their lands with the courtesy posters may secure them free of charge from Carson Q. Dietz.

BIG TROUT SEEK SHELTERED POOLS

On a certain trout stream in Central Pennsylvania, just where it emerges from its passage through the brush, laurel and timber of a mountain gap into the more open country of meadowland and fields in the valley, there is a deep pool, choked with a tangled mass of logs. Over a period of three years, and possibly longer, a giant brook trout has held sway in this pool. Two years ago, Elmer Campbell, an ardent fly fisherman, of Lewistown, succeeded in luring the big brookie to strike. In its first rush after the rise, it darted between the logs and broke the leader. On another occasion, the maneuver was repeated and the trout lived to continue its reign in the "home pool." Campbell estimated its length at sixteen inches and its girth, he said, was unusually heavy.

This incident is given in passing to illustrate a tendency of big trout to seek sheltered pools, a tendency well known to many fishermen. Time and again, in some pool screened by overhanging brush or exceedingly difficult to approach without being seen, a giant trout is to be found. Nature has endowed the trout apparently with a strong protective instinct. Harried by natural enemies, mink, raccoon, and heron, and by the fishermen, these great game fish must constantly be on the alert to achieve large size. It is perhaps only natural, then, that a large trout will select as home a pool affording cover to which it may instantly dart when hooked or pursued by a natural predator. From another angle, shade may also be a consideration, bringing as it does to the water blending shadows in which the fish is not so easily observed. Then, too, from this overhanging brush during the summer months certain insects may drop to the surface. At any rate, protective instinct in trout is one of their most fascinating characteristics.

SEAL ABANDONED MINES

Warden Sam Henderson of Greensburg reports that work has already been started by C.W.A. workers in sealing abandoned coal mines in the Ligonier district. Anglers in the vicinity are looking forward to better fishing on the Loyalhanna Creek from Ligonier to Latrobe as a result of this work to eliminate a source of pollution.

Henderson calls attention to the fact that from eight to ten miles more of fishing water on the Loyalhanna will be made available after the mines have been sealed. Old fishermen recall fine fishing in these waters before they were polluted.

BIG BROOKIES IN STRAIT RUN

From Warden Horace Boyden at Wellsboro comes word that Strait Run, a fine trout stream in his territory, had many large brook trout in its spawning beds last autumn. Reports from wardens generally indicate that a good supply of trout was left over from last season's fishing. This is a highly encouraging omen for trout fishermen in 1934.



CROSS FORK CREEK IN POTTER COUNTY

FISHES VARY IN PARENTAL INSTINCT

As parents, inland water fishes represent two radical extremes. On the one hand, certain species deposit their eggs and apparently forget them, disregarding almost entirely the future of their offspring. Turning to the other extreme, some species not only protect their eggs and young, but even assist the young in finding food until they are large enough to forage for themselves.

Home ties for the pike-perch or wall-eyed pike and pickerel apparently just don't exist. They do not even go to the trouble of building a nest or selecting a site for it. Their eggs are scattered at random on the stream or lake bed in early spring and no further attention is given them by the adult fish. Yellow perch, while they do not build a nest for the eggs and young fish are rather peculiar in the selection of a site. A certain area having brush or submerged aquatic vegetation is chosen, the eggs are entwined on this brush or on the aquatic plants and then deserted.

Parental instinct in brook and brown trout is more pronounced. After migrating in autumn to the headwaters of streams they inhabit, the adult trout carefully select a suitable location for the nest. After the nest is created on a bed of clean pebble or gravel bottom, the eggs are deposited and carefully covered with gravel. After guarding the site for a few days, the parent trout leave it, dropping downstream.

Black bass are also home builders, not only preparing the nest but guarding eggs and young fish until the latter have attained a size sufficient to forage for themselves. To the male bass must go the credit for this admirable nursery trait, as the female deserts the nest almost immediately after the eggs are deposited.

Nature has endowed the bullhead catfish, that blundering chap so popular with boy fishermen, with the most outstanding parental instinct of any of the inland water fishes. Not only do the parent catfish go to great pains to build the nest, but they guard young and eggs devotedly until the

baby catfish are old enough to care for themselves. There is something reminiscent of chickens with their brood of chicks as the adult catfish lead their young along the shoreline during their first expedition from the home.

An October Brownie

Take it from C. R. Ericson, taxidermist at Philipsburg, a brown trout hooked in late October is no cinch to land. Ericson was casting for pickerel in Kephart Dam on the Black Moshannon, Centre County. Heavy catches of these popular game fish were made during the season, and with autumn fishing at a peak, he momentarily expected a strike from one of the big fellows.

The strike came, and so sudden and violent was it that the boat almost capsized. After a hard struggle, with Ericson having visions of the record-breaking pickerel for the Black Moshannon in mind, a big fish was brought to boat. It turned out to be a 20-inch brown trout, beautifully marked and heavy in girth.

Theodore Roosevelt once said: "Our aim in this country should be to conserve and develop our opportunities for outdoor recreation so that they can be within the grasp of as many of our people as possible, rich or poor, old or young alike.

"Angling provides a sport unparalleled for its recreational, health-giving advantages, for individuals in every walk of life, regardless of class, age, nationality, or sex, from the humblest barefoot boy to the baron of industry."

Don't believe in luck in the fishing game. It requires some skill and plenty of work.

Civility doesn't cost anything, and farmers often may give you first-rate dope on where the big fish are to be found.

Coloration in Brook Trout

By C. R. Buller

Deputy Commissioner of Fisheries

WHEN the brook trout is fortunate enough to have ideal conditions for a home, it is one of the most artistically colored and marked of our Pennsylvania fishes. The numerous soft shades and intermingling brilliant spots harmonize the entire color scheme; so much so that the trout is an undisputed favorite among those enjoying the art of reproducing our aquatic life on canvas. Of course, the artist chooses as his subjects the most beautiful specimens whether they are from fish life or from mankind. Luckily the average individual is not so critical in either respect, although each year the trout angler is boasting more and more of the color of the trout caught and giving less attention to their size. It appears that when an angler returns home with his catch the irresistible beauty of an eight-inch typical specimen will receive more comment from his friends than the twelve-inch less beautifully colored one.

It is common knowledge among trout growers, and anglers as well, that trout living under different conditions are differently marked; or in other words, some streams or sections of the country produce more brilliant fish than do others. And unfortunately for the trout grower, a common boast among the trout angling population is that all highly-colored fish are native, having developed in the stream or been planted for a sufficient time to take on this color; and that the dark ones, or less brilliant specimens are hatchery-raised of recent stocking. For a number of years, agents of the Board of Fish Commissioners have made a very careful study of the various shades of brook trout living under different conditions, and from their findings they would hesitate, in most instances, to undertake the selection of hatchery-raised fish from the so-called native fish in any given stream, provided, of course, that the hatchery fish came from a hatchery having a similar chemical water content as that of the stream.

This would not have been the case when the Fish Commission started to plant large-sized fish, because at that time, little thought was given to the color of the fish planted and the great majority of the fish grown had a tendency to be very dark. The Commission acts only as a board of representatives of the angling public and it is its task to fulfill the desires of the sportsmen whenever possible or practical to do so. The demand for beautiful fish led them to attempt to improve greatly, with marked success at most hatcheries, the color of the trout planted; and in the selection of new hatcheries, sites were chosen that would tend to increase color.

The credit for the strides made in increased coloration of artificially-grown trout is not all due to this agency. For a number of years, the market for dressed trout has shown a preference for light-colored fish, and in order to meet this demand, private



BROOK TROUT

growers have likewise made great strides in improving coloration.

The progress made by a number of the private hatcheries along these lines has been of great assistance to the Board, as many of the trout eggs are purchased from commercial sources and in purchasing these eggs, the Board is showing a preference to hatcheries that are producing better colored fish.

The factors that the Board's investigators have found to have an influence on this phase of fish life are strain, food, light, water conditions, and sex.

The strain is of great importance and is one of the factors on which man can exert his influence not alone under hatchery conditions, but also in the streams, as the annual stocking of streams with fish tending towards high coloration can help, in time, to bring about improvement. This, however, is a slow process and will take place so gradually that those interested in the work will probably be given little credit for the results; but inasmuch as any improvement in this respect made in the streams must first start with hatchery-raised fish, it is well to analyze first the effects of various hatchery conditions on the fish. In spite of the progress made, no two hatcheries are producing fish with identical or similar markings. Those who are familiar with the various hatcheries of Pennsylvania can almost at a glance, when viewing a group of trout, tell from what hatchery they came. As a striking example of this, a few years ago the superintendent of the state hatchery at

Corry visited a cooperative fish nursery. The nursery representatives were proud to display their fish crop, and were particularly proud of the size of the fish. When he asked where they were obtained, the superintendent was informed that they had been grown from fry on the property. He at once disputed this and made the statement that the fish had recently come from the Corry Hatchery. Upon being further questioned, the nursery officials admitted this, but were curious to know how the state superintendent could tell these fish. He then explained that he was familiar with the color and markings of the fish produced at the hatchery over which he had charge. As a word of explanation this misappropriation of fish occurred before the Board undertook to supervise personally all fish stocking; and this group of sportsmen, instead of planting the fish in the public streams for which they were intended, released them in their own pools. This was often the case under the old system of fish distribution.

In the early days of trout culture, growers noticed that in groups of fish living under the same conditions, there was a great difference in colors and markings, ranging from deep dark to a highly-colored light shade. Little attention at first was given this subject, but as the purchasers and anglers became more critical, growers worked toward meeting their demands by selective breeding for color. The trout culturist in this line of work probably took his first lesson from the goldfish farmers, as they were the first ones

to improve the strain for color with outstanding results. Their endeavor was to lower the percentage of dark or carp-colored fish and to produce a strain that would take on a permanent coloration at an early stage in life. This was important to them, as it is to their advantage to be able to place on the market a high percentage of the season's crop to meet the Christmas demand. These fish growers were also the first to realize that strain alone was not the governing factor, but that food, light, water condition and sex also had an important bearing on the color.

The trout grower who had foresight enough to see the importance of color likewise saw that an opportunity for the general improvement of the fish strain afforded itself through this source, and where sustained efforts have been made, along this line, the trout have been made superior in many ways to those grown in the hatcheries in early days.

Which of the numerous things governing high coloration of fish is of most importance it would be difficult to say, but naturally the place to start the improvement is in selection of parent stock having this quality. However, as evidence shows that strain is not the sole factor involved, fish bred for several generations for color, when placed under environment conducive to producing dark fish, will likewise lose their brilliant markings and take on dark coloring.

A correctly balanced source of food supply has a tendency to bring out and develop the best in all animal life. The stock farmer, and his associates, have worked many generations in developing various rations for domesticated animals until today scientifically prepared foods are available to be fed to develop certain qualities. As an example, a different combination of foods is used in the cattle industry if milk is to be produced than is used where beef cattle are desired. Likewise, if the herd is to be entered in competitive showing, foods are incorporated in the diet that will bring out the highest sheen to the body covering.

Fish growers also know the importance of food in reference to high coloration, but many difficulties have confronted them in finding a practical food or combination of foods that will produce color without sacrificing other desired qualities. Two things have entered into the difficulty of feeding trout as compared to other domesticated livestock. Fish, throughout their natural range, live upon a food supply consisting of a wide variety of animal and vegetable life, which, when analyzed, is a very complex combination of food substance. The food requirements of terrestrial animals that have been brought under a state of domestication is much more uniform and simple and is more easily duplicated. Second, livestock breeding and its allied subject is one of the world's largest and oldest industries. Over many generations corps of trained scientists with almost unlimited financial resources have been making scientific advancement along these lines. The farming of fish is still in its infancy and the combined investments of all the fish establishments in the country would not be sufficient even to warrant the creation of a college or the maintenance of a corps of scientists to study this

phase of the work. However, the fish growers in their work have used to great advantage knowledge gained in other kinds of animal feeding and have used it with various degrees of success in trout feeding. Laboratory tests, in the feeding of trout, soon determined foods conducive to high coloration, but for various reasons, those tried out were not practical to feed on a large scale under average hatchery conditions. Trout, fed chiefly upon other fish, are generally high in color, and some growers feed an abundance of this food. Others do not look with favor upon its use, because of the constant danger of introducing disease; the excessive oils and fats present may interfere with normal egg production, and the unassimilated matter thrown off through the digestive tract causes unsanitary pond conditions which is always a menace at hatcheries.

During the summer of 1933 a pond of mature brook trout, at the State hatchery at Pleasant Mount, were fed upon a variety of salt water mussels. This food proved to be outstanding not alone in increasing color, but also in promoting good growth and body build; but the cost of the food makes it prohibitive except for experimental purposes. During the same period, under laboratory supervision in properly controlled tanks, a group of small trout were fed entirely upon a large kind of daphnia. Daphnia is an aquatic organism that is the chief food of most kinds of baby fish living in a state of nature. The digestive quality and high mineral content of this food, together with other body building requirements, developed the most brilliant color and markings it has been the Board's pleasure ever to observe. The contrast between the fish fed with this natural food and those fed the usual trout food was so outstanding that after the test was completed the fish were displayed in the public aquarium for several months. In spite of the fact that tests showed the high value of this food for small trout, from our knowl-

edge of the life history of these organisms, they would be unobtainable in sufficient quantities to feed a worth-while number of fish, particularly at the season of year when artificial feeding is required.

As stated elsewhere, in Pennsylvania, no two trout hatcheries produce the same colored fish. The State institutions rank as follows, in respect to their ability to produce highly-colored fish: Huntsdale, Reynoldsdale, Bellefonte, Corry, Tionesta, and Pleasant Mount. At all of these plants the fish are practically of the same strain and are fed upon the same kind of food; namely, sheep liver. The following will be offered as evidence that strain and food are not the only factors necessary for the maximum color in fish. Fish of all ages are frequently transferred from one hatchery to another. These transfers are necessary to relieve crowded conditions, to cover losses, and to equalize distribution. At Pleasant Mount, it is usual for the fish to be dark and to be void of brilliant markings. When the fish from Pleasant Mount are transferred to Huntsdale, or to any of the other hatcheries where the fish have a tendency toward high color, the Pleasant Mount fish in a few weeks develop this characteristic, and when transferred from Huntsdale to Pleasant Mount, the reverse holds true.

Most species of fish have a tendency to take on color somewhat in proportion to the shade of surrounding conditions. When held in light-colored tanks or pools, in crystal-clear water, they invariably take on a lighter shade which automatically brings out heretofore undiscovered brilliant markings. This applies to hatchery conditions. The plants having clear water that permits penetration of light rays have a distinct advantage over plants supplied by organically stained water, or water that runs turbid for a long period after rainfalls. But in order for the light to affect the coloring, certain other conditions must be present. The water at the Corry Hatchery is of the clearest quality, never



BROOK TROUT IN FRY STAGE



TYPICAL PENNSYLVANIA BROOK TROUT

roily, yet the fish do not assume a high color like the fish at Reynoldsdale or Huntsdale where the water likewise is always clear.

Chemical analysis of the waters at the various trout hatcheries shows that trout can be successfully grown under a very wide range of water conditions, but it also shows that in addition to strain, food, and light the chemical contents of the water have a direct bearing on coloration of the fish. That is, so-called limestone waters produce much more brilliantly-colored specimens than do the areas supplied with freestone water.

Investigators do not fully agree on just what elements in the food of fish tend toward producing high color. Some are of the opinion that color is governed by the amount of oils or fats present; others that it is due to the minerals present that can be assimilated by body activities, particularly those of calcium derivatives. This Board's investigators believe that mineral matter is of the most importance where food is concerned in coloring fish. If this is true, difference in color between the fish at the two hatcheries mentioned above, where the clearness of the water is about equal, is that the Corry plant uses freestone water low in minerals while Reynoldsdale uses water rich in calcium products. Fish living in these limestone waters, through respiration and other body activities, consume and assimilate some of this mineral matter.

Sex also plays a part in the color scheme. At the hatchery, as well as in the streams, the male fish are inclined to be more brilliantly shaded, and this is particularly true at the approach of, or during the breeding season. It is of little importance except that the very highly-colored males selected for brood stock may have a tendency to transmit this characteristic to their offspring.

The factors that have a bearing on improvement of color at the hatcheries likewise apply to the native fish in the streams or those released therein by the Board. Some hatcheries are advantageously situated and have available a number of things contributing towards high coloration, and likewise some streams are so located. The natural trout streams in Pennsylvania are very diversified in character ranging from those fed by huge clear-flowing limestone springs to those fed by a series of small freestone springs, and the coloration of the trout in these waters is in direct proportion to the ability of light to penetrate and to the hardness or chemical content of the water.

In the limestone regions, there are found two kinds of streams—one clear flowing at all times, permitting light penetration and ranking high in natural food of a rich chemical content. This condition is always conducive to very brilliantly marked fish. The second type is that of streams fed by large springs which have a tendency to be turbid for a number of days after each period of rainfall. During wet seasons they may run roily for long periods of time. These stream bottoms, as a rule, are composed of light-colored sand or gravel fairly rich in food supply, but are not to be compared with the wealth of food found in clear-water streams, because of the inability of light to penetrate for days at a time and because the destructiveness of the turbid water in relation to plant life dwarfs the food supply. Many of these kinds of streams would be greatly lacking in fish forage were it not for the small, clear-flowing spring runs that enter at frequent intervals. These small springs act as breeding grounds for the animal life that makes up the trout's daily menu. Fish living in streams of this kind are generally light-colored, but lack the brilliant markings as compared with those living in the clear-flowing streams of the same regions.

Brooks where the water originates and flows through freestone sections constitute another extreme in water conditions in Pennsylvania trout areas. Such streams are usually deficient in mineral matter and produce an entirely different kind of trout forage. The stream bottoms are generally dark and well shaded by forests. Two distinct types of streams are also to be found in the freestone regions of the State: first, the clear-flowing ones surrounded by beech, birch, and maple forests, rather well shaded during the warmer periods of the year. They have dark stream beds and are fairly well supplied with fish forage. The forage found in these streams lacks the mineral and other substances found in hard water sections, and where these conditions exist comparatively dark fish can be expected.

The latter type of stream, in this group, is the stream containing the so-called hemlock or black trout, and fortunately for all concerned, but few of them remain in Pennsylvania today. These streams generally originate in hemlock swamps flowing through second-growth hemlock forests. The stream bottoms consist of dark gravel covered with a very dark silt. The hemlock being a conifer, light conditions in the stream are poor throughout the year and at frequent long intervals the water is stained a light brown color by the decomposing organic matter. All this tends towards dark or almost black fish, void of any bright spots. Trout inhabiting streams of this character are not alone lacking in desired coloration, but are also stunted in growth for lack of food.

In the hemlock streams, through inbreeding over many generations, the strain is naturally dark in color and when transferred to more favorable locations will lighten somewhat in shade, but still retains an abnormal dark background. Although the bright markings will make their appearance, they are somewhat dulled by the extreme dark ground surface. When light-colored fish are planted in this type of water, in time they will assume the characteristics of the native hemlock trout.

While the Board of Fish Commissioners and its associates have made advancement in improving the color of the trout planted in the public waters, yet so many things enter into this interesting phase of fish life, over which those interested have little control, that at least for some time to come, it cannot be expected that brilliantly speckled beauties will be available in all trout waters. Some anglers have a particular stream to which they confine many of their fishing days; but taken as a group, trout fishermen are a wandering lot, trying their skill on many different streams throughout the season. If the favored stream happens to be of water where the fish run generally dark in color, and they make a catch in hard water areas, it is at once assumed that their particular stream contains only hatchery-raised fish of recent stocking, and at last, they believe a stream has been found containing native stock. To the contrary, it is safe to assume that the fish in both streams are hatchery-grown and local conditions make the difference in appearance.



Seth Says

Well, I'm sure a-count-in' the days afore the openin' of speckled trout fishin'. Ef signs means a thing, we're in fer some o' the best fun on our mountain runs this year in a span o' time. Jest yestidday I was a-talkin' to ol' Jerry Tims who lives back in the Gap. Jerry an' me ginerally gits together 'bout this time swappin' fish yarns. He's a purty slick fisherman, ef I do say, an' by gorry, last May he got a speckled trout that measured 16 inches near his place. I been a-fishin' fer that big feller three years, an' say mebbe he didn't rub it in.

Jerry an' me fishes considerable different fer trout. He figgers that the more water covered the better. A mighty fair feller, too. I ain't ever seen him take trout much under eight inches, an' he stops when about six to ten has been caught. Now, fer me, the best way o' trout fishin' is coverin' only mebbe a short stretch o' good water. I reckon it's because I likes to fish careful an' work into good holes without bein' seen. Besides, when a feller goes bustin' through the brush he's missin' a lot. Many's the time while I'm hid along a likely spot, thet I see gray squirrels an' last year, danged if a big mink didn't slip across the run not more'n 20 feet below me. The fun a feller has when he's a-fishin' ain't all in the fishin' by a long sight. When you figger along with the fun o' jest bein' by a crick, thet the sucker run's a-startin' now, speckled trout time's a-comin' an' then bass—well, I jest wouldn't miss it nohow.

Pike perch spawn in March and April.

Pickereel have not been artificially propagated in Pennsylvania.

Yellow perch thrive best in ponds and lakes. They spawn in April and May.

WHAT THE SUCKER MEANS TO PENNSYLVANIA FISHING



Sucker fishing is a tradition with Pennsylvania anglers. When the first settlers followed the waterways through the mountain passes into country that formerly had been penetrated only by red men and an occasional white trapper or trader, they found vast schools of suckers in the larger streams and many of the tributaries. Native to Pennsylvania inland waters, suckers provided an important source of food for the pioneers. Great numbers were caught and salted down for winter use. During the colonization period, even the inroads of the settlers did not materially affect the supply of these fish. Not until stream pollution dealt a shattering blow to fish life did the sucker hordes decrease rapidly in number. Yet despite the limits imposed by industrialization on our streams today, this hardy fish is perhaps best known and most widely fished for of any species in the inland waters.

The comeback of the sucker in Pennsylvania waters during recent years ranks as one of the most encouraging factors in the fish conservation program. Without question, this fish bridges a wide gap for fishermen throughout the state. Its range covers many streams not ideal for game fish; it is hardy, a fine food fish, and affords anglers living at considerable distance from some of the famous game fish streams an opportunity to fish right at home. During almost every month of the year, large numbers of suckers are taken for food purposes, although of course, these fish are more tasty when caught from low temperature water during winter, autumn, or early spring. Not only are catches of suckers constantly increasing in many sections of the state, but an ever-growing army of fishermen are turning to this type of angling.

Instances are on record at the Fish Commission of the catching of over 300 suckers with hook and line by an individual fisherman during the months of February and March. One sucker weighing five and one-half pounds was caught last spring on a tributary of the Juniata River, and a number have been recorded exceeding four pounds in weight.

Still-fishing is the most effective method for catching suckers. The year-round, Sundays excepted, is open season for these fish and the daily catch limit for an individual is twenty-five. In Pennsylvania, the average weight of suckers taken in the spring, just when they are starting their spawning run, is from one to two pounds.

Two factors are responsible for the sucker increase. First, protection, that is the outlawing of devices such as the gig, trapnet, and gillnet, saved thousands of adult fish that were taken each year before they could deposit their spawn. The second factor was that of heavy stocking of suitable waters

with suckers by the Fish Commission. The sucker eggs for these plantings were obtained through a cooperative agreement with the Federal Bureau of Fisheries operating on Lake Champlain. During the past two years, however, owing to financial conditions, the Bureau did not operate this station and Pennsylvania was unable to secure eggs in worthwhile numbers for stocking. In order that the sucker stocking program may be continued, the Board is now conducting investigations on certain water areas within the state with the hope that in a year or more an abundant supply of the eggs of this popular fish will be produced in Pennsylvania.

A theory that suckers destroy much game fish food is open to debate. Undoubtedly, they do feed upon small organisms that may provide food for the young of game fish species. On the other hand, it is believed that young suckers provide much valuable forage for species of game fish and offset this disadvantage many times in waters where they are numerous. At any rate, the status of the sucker with Pennsylvania fishermen is firmly established, and today it ranks as one of the most valuable fishes in our inland waters.

hemlock. Perhaps a major attraction of the creek is its scenic beauty. Four waterfalls, ranging in height from 12 to 25 feet occur in its course, and many of its pools range in area from a few square feet to 40 square yards and in depth to ten feet.

TROUT GROWTH DEPENDENT ON ABUNDANT VEGETATION

Directly or indirectly, every form of animal life is dependent on vegetable matter for existence. Fish life also relies upon aquatic and other vegetable matter for growth, and the relationship of vegetation to the development of trout is of vital importance. Trees and brush, for instance, bordering on trout waters not only aid in preserving low temperature through the shade afforded, but assist in retarding rapid run-off and preserving more constant stream levels. Tree roots, too, are necessary in preventing erosion of the soil which may often result in the smothering of many forms of aquatic organisms. Silt from erosion prevents the passage of light necessary to growth of aquatic plants that often harbor smaller organisms.

Leaves and branches of trees overhanging



DAMS AT PLEASANT MOUNT

DINGMAN'S CREEK RANKS AS FINE TROUT STREAM

One of the most picturesque trout streams in eastern Pennsylvania is Dingman's Creek in Pike County. Its course is marked by beautiful falls and deep pools that are ideal for fly fishing. Last year, it had the distinction of producing two of the largest brook trout reported to the Fish Commission. Warden Frank Brink of Milford reports that on the opening day he talked with 40 fishermen trying their luck on Dingman's Creek, who had on an average ten trout to a basket, ranging in size from seven to 12 inches. Several anglers had taken from 15 to 18 trout by noon on the first day.

The watershed of this fine soft water stream is forested with a fine growth of timber, some of it virgin white pine and

trout streams furnish a home for various kinds of insects that may fall upon the water and during the summer serve as a source for choice trout food. Pennsylvania trout streams as a general rule are very rich in aquatic vegetable matter, or, in other words, plants that grow and thrive within the streams. In instances where there is a deficiency of this type of vegetation, it must be substituted for in some other way. Falling leaves, when they lodge in riffle and pool during the autumn, serve as ideal incubators for certain kinds of aquatic organisms furnishing food for trout. Some of these organisms use the leaves as homes, feeding in turn upon even more tiny aquatic life that subsists on the decaying vegetable matter. This type of trout food is highly essential to the growth of young trout.

Fly Fishing for Trout

By Kenneth A. Reid

Member, Board of Fish Commissioners

FLY fishing as a sport is growing in popularity every year. Twenty-five years ago a real fly fisherman was a curiosity on Pennsylvania streams, but today, together with the beginners just learning the art, they form a considerable percentage of the fishermen. Not only are trout fishermen discarding the worm and similar bait for the fly, but many bass fishermen are discarding live minnows for the larger artificial lures known as bass bugs and similar creations. It is well for the future of our favorite sport that this trend toward the general use of artificial flies does exist. Not that artificial flies are less effective as fish getters, for in proper hands I believe the reverse to be the case, but that through their use the mortality of the little fish returned to the water is reduced to a small fraction of that existing in worm fishing for trout or minnow fishing for bass. As a conservation measure for the perpetuation and improvement of the sport, fly fishing should be encouraged by every real sportsman. The number of small fish unnecessarily killed each season by bait fishing methods would go a long way toward improving the fishing the following year had they been caught on a fly and carefully released.

If you go fishing for the enjoyment of the sport—and the future of fishing in Pennsylvania's heavily fished waters does not admit of any other viewpoint—your measure of satisfaction will be greatly increased by the use of the artificial fly. I know whereof I speak, for I caught trout on worms and bass on minnows long before I discovered the greater pleasure of taking them on the artificial fly. I have heard bait fishermen attempt to argue this point, but I have yet to discover a proficient fly fisherman who does not agree—and 90 per cent of them have gone through the bait fishing stage. The same applies to the wet and dry fly controversy; the great majority of dry fly men formerly fished wet fly. So if you have not tried it, you will do yourself, as well as the other sportsmen of Pennsylvania, a favor if you look into the possibilities of the floating fly for trout and bass this coming season. You have been missing some rare sport.

There is no mystery about fly fishing for trout, nor does it require any unusual skill. As in any other sport, there is a right method and a wrong method, and certain fundamental principles must be observed. Of course, the longer one casts the fly, the more expert he will become, provided he is started on the right track. On the other hand, I have seen men in a very few days' practice under the guidance of a good caster do better rod work than others who had been at it for ten years, but who never took the trouble to get started right or to discover and correct their faults. Let's get

started right and thereby get the full measure of enjoyment from the sport.

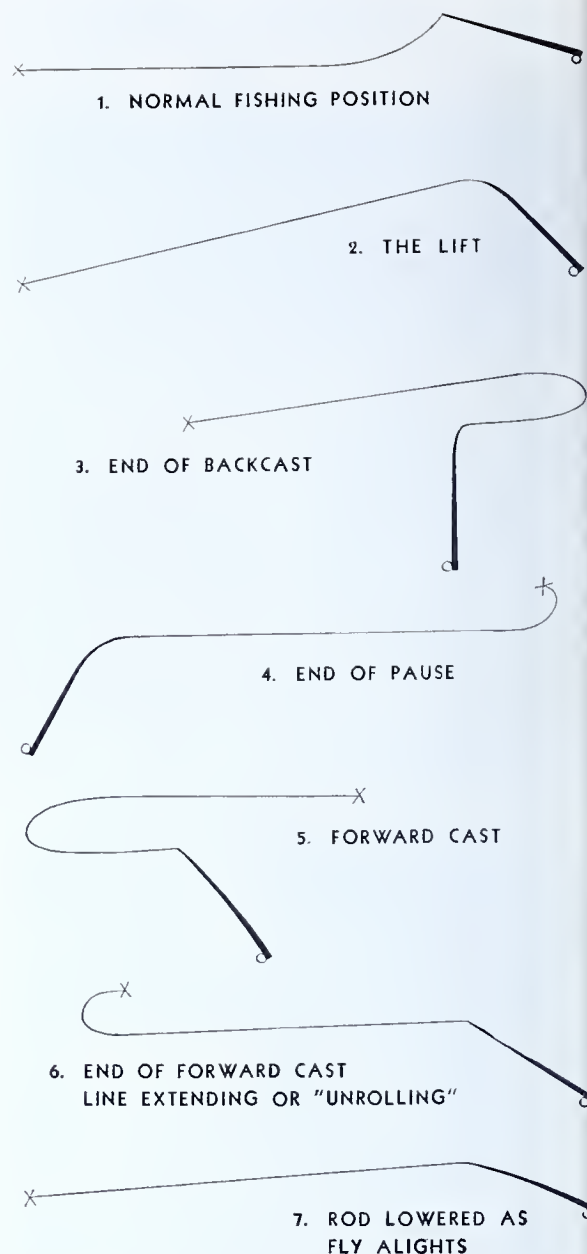
The first requisite is to see that your outfit is suited to the type of fishing. You can't cast a fly with a steel bait casting rod—although I have seen some amusing spectacles on our streams of men attempting it. Nor can you cast a fly with any degree of success with a bait casting line, even though it be on the best fly rod in the world. The individual items of tackle must not only be suited to fly fishing, but must be suited to each other and the assembled outfit balanced in this respect. Otherwise the results are bound to be disappointing.

The usual rod for trout fishing with bait is really of the fly rod type; that is a long rod of from eight to nine and a half feet with the reel seat below the grip. The chances are that this rod will be satisfactory for fly casting—at least for a beginning. If you are going to buy a rod, I would advise one of eight feet, weighing between $3\frac{1}{2}$ to 4 ounces, preferably about $3\frac{3}{4}$ if with skeleton reel seat, and nearer four ounces if with metal reel seat. The old standard recommended for trout fishing has for years been nine feet, weighing five ounces, but you will get a great deal more pleasure out of the lighter eight foot rod, and it will not tire you after casting all day like the heavier ones are apt to do. In any case it should be a good grade of split bamboo.

If you intend fishing the smaller streams with the wet fly, an F level enamelled silk fly line will be about right for the eight foot rod. For dry fly fishing on the larger Pennsylvania streams, an HEH tapered line will be better, but such a line is a liability on small streams where only short casts are made, for the very good reason that you must get several feet of the heavy belly of the line beyond the rod tip before there is sufficient weight to develop the rod in casting, and this does not happen with a tapered line until after you get your fly out twenty or twenty-five feet.

Fairly good fly reels may now be had for as little as two or three dollars. The fly reel is probably the least important item, but it should not have a projecting handle that will foul the line. The single action disk type about three inches in diameter with narrow spool is best. Such a reel should weigh about five ounces to properly balance the eight foot rod. Don't waste your money on expensive agate or chrome line guards on the reel. They are entirely unnecessary, if not actually a detriment to even spooling of the line. On the other hand, an agate or chrome steel first guide and top on the rod are highly desirable.

Leaders and flies furnish subject matter for endless discussion. The usual leader is either three or six feet. Personally, I seldom use one less than seven and a half feet, and



1. Normal Fishing Position. Rod about 15° to 20° above horizontal. Line and fly extended on the water.

2. The Lift. Rod raised to 60° to overcome inertia of line and lift it from the water. The lift should be made by an upward rather than a backward motion to insure a high back cast.

3. The Backcast. The lift and the backcast are merged into one smoothly accelerating motion. The power stroke should be stopped at or slightly before the perpendicular, from which point the rod naturally follows back to the position in figure 4. Note the position of the line unrolling above and back of the rod top in figure 3.

4. Position At the End of the Pause. Rod should be stopped at about 20° behind the perpendicular. Note that the line has almost but not quite unrolled and straightened out its loop above and behind. While the common fault is to start the forward cast too soon, if you wait until the line is entirely unrolled, it will immediately begin to fall and will have lost its "live" feel so necessary to a good forward cast.

5. The Forward Cast. Note the forward traveling loop of the line.

6. End of the Forward Cast. The loop is nearly unrolled.

7. Rod Lowered as Cast Is Completed, and line, leader, and fly drop lightly on the water.



Left: Beginning the Cast. Note the left hand beginning to strip in line to overcome inertia preparatory to the "lift." Note—In this photograph the rod is slightly below the horizontal because the caster's position is three feet above the surface.

Center: The Lift. On long casts the left arm would be extended downward giving an additional yard or more of line for the "shoot."

Right: End of "Pause." Just before forward cast is started. The rod should never go farther back, and in normal casts, should not be quite as far behind the perpendicular. Note the loose line held by the left hand for release in the final shoot at the end of the forward cast.

frequently in low water, considerably longer. For dry fly fishing, they should be tapered. On flies, I will merely suggest that the sizes in the wet variety should range from eight to twelve, and in the dry, from 10 to 14. Special conditions may occasionally require sizes larger or smaller. On dry flies, look well to the hackles—they should be fairly stiff and at right angles to the shank, or even pointing slightly forward. If they are soft and slant back toward the point of the hook, the fly will not float, regardless of what the maker claims for it. Now as to casting, get this point firmly fixed in your mind; your dry fly has no appreciable weight, and therefore it is the weight of the line that carries it out and makes casting possible. The majority of beginners are trying to cast with a line entirely too light, and the average small town tackle store does not carry a line in stock heavy enough for even a four ounce rod. Another point to remember is that fly casting is largely a matter of correct timing. Finally, remember that the spring of the rod plays a large part in propelling the line; don't overwork yourself.

If you are a rank beginner, start practicing on the lawn. Lay the rod flat on the ground and draw off about twenty-five feet of line, for you must have something to start with. Then pick up the rod, and holding it in approximately horizontal position, proceed as follows: 1. Raise the rod to about 60 degrees to overcome the inertia of the line and start it moving toward you preparatory to the real back cast. 2. Don't stop, but accelerate the movement with a smart switchback of the rod and stop it abruptly just back of the perpendicular (about 20 degrees). 3. Pause for the line to straighten out behind you. 4. Bring the rod forward and downward with a smart chopping motion and stop it abruptly slightly above the hor-

izontal. 1. is the "lift"; 2, the back cast; 3, the pause; and 4, the forward cast. The lift and back cast are merged into one smoothly accelerating motion, and the forward cast should be started slowly and ended with a snap.

The common faults to guard against are: 1. Too much of a jerk at the start of the backward and forward casts. 2. Rod too far back at the end of the back cast. If you try to stop it at the vertical, you will likely succeed in stopping it at the proper angle, about 20 degrees behind. 3. Insufficient pause for the back cast to extend itself behind you. Practice will enable you to feel a slight tug of the line, which is the signal for starting the forward cast.

After you have mastered the fundamental, practice shooting the line, which consists of stripping off a few feet between the reel and the first guide with the left hand and letting it go at the proper moment as the live forward cast is extending itself out over the water. Strip in this line just before you start the left at the beginning of the cast and hold it in the left hand until the forward cast is nearly completed, when the pull of the live line will pull this extra line out through the guides. A little practice will tell you the precise moment to release the shoot, and you will find it an invaluable aid to delicacy and accuracy as well as enabling you to increase your casting range by that amount of line.

In casting the dry fly, do not cast your fly directly at the spot on the water where you wish it to alight. Cast for an imaginary object about a yard directly over it. Then when the cast is completed, the fly will fall lightly to the water instead of slapping it. Fish upstream and study the currents as you go in order to have your fly float as naturally as possible, free from drag by the leader or line. Do not impart motion to it

after it has touched the water. With the sunken line, it is often advisable to impart motion artificially, but with the floating variety, it should float naturally wherever the current chances to take it.

With the dry fly it is important that the line be well greased so that it will float on the surface. A line that sinks is an abomination. The fly should also be treated with an oil to aid its buoyancy. Contrary to the usual advice, I frequently grease my leader when fishing fast heavy water where every aid to buoyancy is needed. The higher the fly floats, the more effective it is likely to be.

I have stressed casting ability because it is one of the essential fundamentals to successful fly fishing. It is important with the wet fly, but doubly so with the dry fly. A good caster can reach many fish that the poor one cannot, and will take many fish within the range of the latter that refused the clumsier offering. While I am not one of those individuals who claims that he doesn't care whether he catches any fish or not—such a man is either a liar or else he does not have the real fishing spirit—I do maintain that the accomplished dry fly caster derives much pleasure from casting well and watching his fly float daintily on the surface that is missed in other forms of fishing—and when strikes are few and far between, this is an asset worthy of consideration.

KILLS WATERSNAKES

Curtis Stewart, special warden of Hazleton, ranks as an ace at watersnake killing in streams near his home. Warden Russ Womelsdorf reports that last summer, at every opportunity, Curtis staged snake hunts on the Quakake creek, a fine trout stream. He benefited the trout fishing by killing 75 watersnakes from May 16 to September 20.

TACKLE HINTS

Success or failure in landing big trout often may depend upon the tackle. For this reason, the time to check angling equipment is not when a coveted brook or brown trout rushes toward a snag, but during long winter evenings devoted to planning that trout fishing trip. Following are some timely suggestions on fly fishing tackle repairs submitted by Howard W. Morris, tackle expert, of South Greensburg.

The rod. Examine the fly rod carefully. In this check-up, particular attention should be given the windings, loosened ferrules, cracked or broken tip joints, or perhaps a guide that may be nearly worn through.

The line. First try the end of the line that was used last season, ascertaining that there are no weak spots. This may be accomplished by taking about two feet of line at a time between the hands, giving it a series of light jerks. The entire line should be checked in this manner. If weak spots are found in the portion used last season, the line may be reversed for use this year. But if doubt exists, a new line is perhaps the most logical solution of the problem.

Leaders. Last year's leaders are seldom trustworthy, if they were used during the season. Leaders that were not used may be given a test by soaking thoroughly in water, and then submitting them to a steady pull to determine their strength. Preparatory to starting on that fishing trip, it is advisable to soak two leaders thoroughly, placing them between damp layers of cloth in a leader box or paper wrapping. Weak leaders are responsible for the loss of many fine trout each season.

Flies. Selection of flies for a day astream is of first consequence. It is generally advisable to have at least two flies of the same pattern, and a number of different varieties of flies in the book. A number of strikes on an artificial fly frequently fray it, making necessary a change to a new fly.

The reel. A drop of oil in each bearing of a reel is usually sufficient to keep it in working order. More oil may spread to the line, with the result that a slight film of oil on the water will accompany each cast. Exceptional care should be taken in keeping water from the reel as grit and sand in water are harmful to reel bearings.

How Fish Feel

The entire skin of a fish is provided with touch sense cells. On some portions of the body they are more developed than on others. Certain fish, such as the bullhead catfish, are provided with barbels or feelers, and the sense of touch is very well developed in these organs, as they are probably used to assist the fish in finding its way near the pond bottom in roily water.

How Fish Steer

The tail fin of a fish, assisted by the body movement, is probably the chief steering device of the fish when it is moving through the water on a level plane. When it wishes to change its plane for a higher or lower level, the paired fins are used, much as are the wings of a submarine or an airship. Probably at this point the air bladder also comes into play.



REMOVING UNFERTILE BROOK TROUT EGGS FROM HATCHING TROUGH

Delaware Largemouths

The Upper Delaware River, famed for its smallmouth bass and pike-perch fishing, also provided some catches of largemouth bass this year, according to Warden Frank Brink. Isaac Andrews, of Dingman's Ferry, a veteran fisherman who knows the Delaware like a book, told Brink recently that early in September he caught 20 largemouth bass in a week's fishing. The last catch consisted of one 15-inch largemouth and one measuring 16 inches.

Tradition has it that the American Indian was the first to cast a fly on an American trout stream. The red men of the Carolinas were said to have fished with a fly made of buckskin with the hair on.

Those distant "best places to fish" are right here in Pennsylvania.

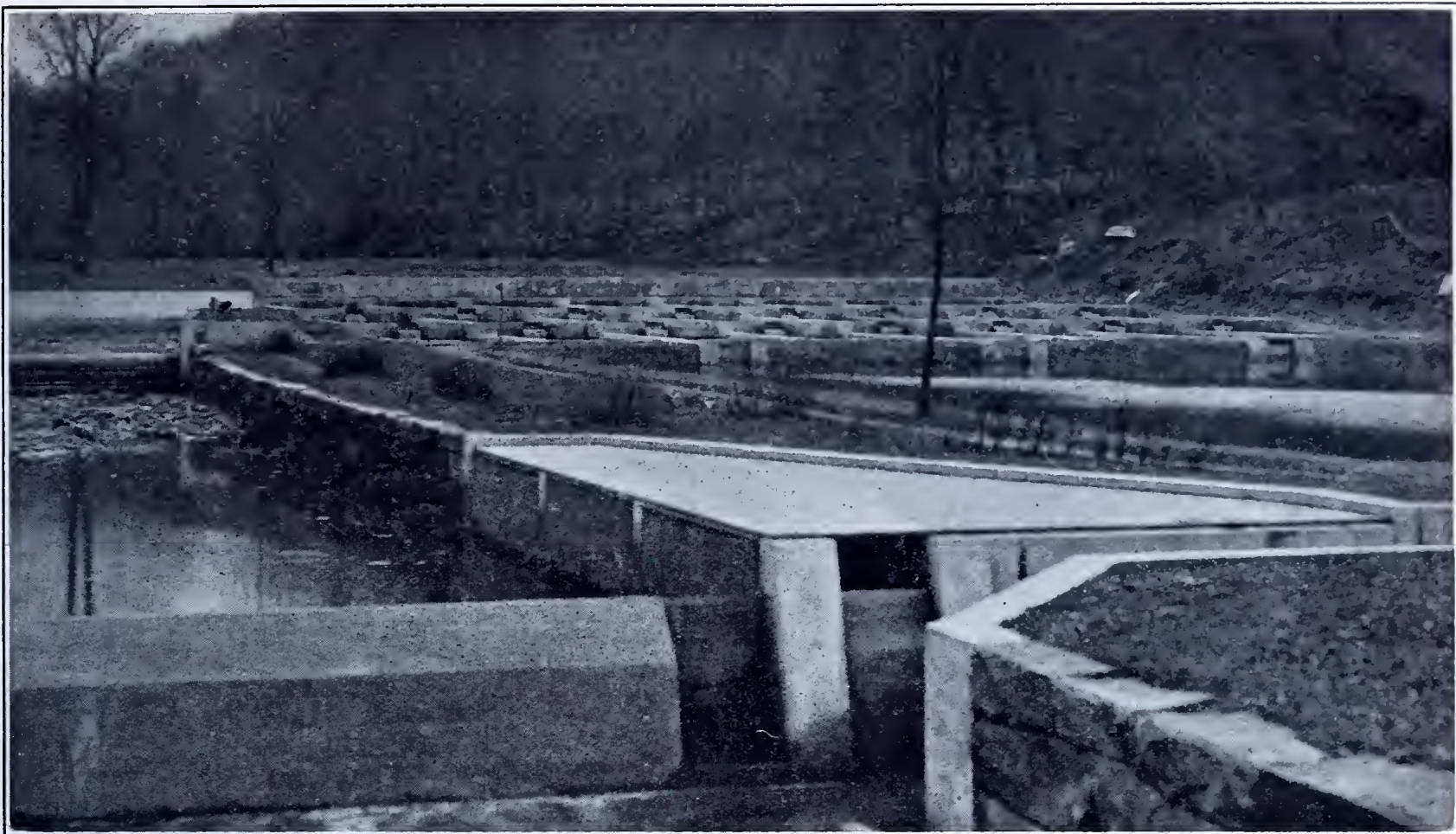
An optimist generally makes a good angler.

New Ponds Completed

Word has been received from the Pleasant Mount Hatchery of the completion of a new series of ponds for the raising of bass and other warm water fishes. This development was created on the south side of Highway Route 170, consisting of one large storage dam for brood bass, one pond of approximately an acre for a breeding pond and a series of twenty-four smaller nursery ponds. The project should add materially to distribution from this plant, and was made possible by the kindness of those interested in welfare labor and the Civil Works Program who allotted men for this purpose.

If fish aren't hitting your lures, don't get a grouch on. The next hour may make a difference in the story.

Yellow perch do not protect their eggs or young fish.



TROUT PONDS AT TIONESTA HATCHERY IN FOREST COUNTY

FISH FARMS BEING BUILT TO LIMIT OF PRODUCTION

In most branches of farming, it seems to be the slogan today to decrease production per unit area. The fish farms of the Board of Fish Commissioners of Pennsylvania are not in the same category as other types of farms because the demand for their fish crops always exceeds the supply and their slogan is to use every means practical to increase production per unit area at the hatcheries. Corry Hatchery, for instance, located at Corry, Erie County, is one of the oldest fish farms in the state and is looked upon as a model trout producing plant. Several years ago, it was assumed that this plant had been built to its capacity and no further developments would be practical; however, tests showed that the water at the extreme lower end of the property, after passing through many series of ponds, still contained sufficient elements to grow fish although some essential qualities were lacking. In order to increase the production of this plant additional lands were acquired and holding ponds constructed.

Research has shown that in some instances, where vital elements of hatchery waters are lacking, an increased volume or flow will compensate for this deficiency. In

order to compensate at this plant for deficiency in the water supply, after it had been used so often, the new development consisted of two pools abreast, and four deep, each 8 feet wide and 200 feet long. At the first unit, all the water was passed through this area. To compensate on the next development for further deficiency in the water, this unit consisted of two single ponds, each 200 feet long and 8 feet wide with the total water supply of the hatchery passing through these areas. These ponds have been in use a little over a year with outstanding success.

premeditated. No more time is required to release bait fish not desired than in carelessly tossing them on the ground to die.

By carefully returning young minnows to the water, our fishermen will take a real stride forward in preserving good fishing on their favorite streams. And while on the subject, it's always a good plan to release minnows not used during the day's fishing if you're planning a long drive home. They'll be there for you next time when you're fishing that pet stream.

SAVE MINNOWS YOU CAN'T USE

Frequently in seining for minnows, anglers unintentionally destroy much valuable food for game fish. As a general rule, minnows preferred for bass or pickerel bait are from three to five inches in length. A fine-mesh minnow seine, dragged through narrow pools and shallows in a small tributary stream, nets not only bait fish of suitable size, but hundreds of minnows too small to consider as bait. Too often, when minnows of suitable size have been placed in the live bucket, the other fish in the net are thoughtlessly tossed out on shore and left to die. Not only is a valuable source of game fish forage destroyed in this manner, but the fisherman is actually defeating his own objective by thinning down the supply of minnows available in the stream he relies upon for his live bait.

For better fishing, an abundance of forage fishes, minnows of various species in particular, are necessary. Obviously, destruction of the food supply must ultimately result in a scarcity of the bass, pickerel, or wall-eyed pike reliant upon it for existence. In a few instances is this waste of bait fish

Lands Muskrat

While fishing for bass in Spring Creek, John Rerick, of Big Run Junction, hooked and brought to land a large muskrat, according to Warden Robert J. Chrisman, of Kushequa. After testing the qualities of Rerick's tackle, during the landing procedure, the somewhat disgruntled muskrat broke loose and returned to the stream.



MILADY SCORES ON THE TROUT STREAMS



FLY FISHING FOR TROUT ON SLATE RUN

FISHING TODAY IS A BIG BUSINESS

During the early days of the fish conservation program in Pennsylvania, little consideration was given to its status from a financial standpoint. The thought at that time was apparently to consider fishing as a sport only. Today, in addition to giving it this consideration, the fact should be emphasized that it means a great deal to the people of Pennsylvania financially. Certain sections rely heavily on revenues derived from hunters and fishermen annually. When a man has a strong desire to fish, he is going to fish, and if Pennsylvania did not offer worth-while fishing, he would go elsewhere to find his sport. In consequence, this source of revenue would be lost to people of the Commonwealth. Certain states, and provinces bordering on this country have within the past five or six years entirely reorganized their fisheries commissions. On a strictly business basis, they found that by providing good fishing, available revenue would be increased.

It has been said repeatedly that the people of the United States spend each year \$650,000,000 in pursuit of fishing, hunting and kindred sports, and that the combined states issue 13,000,000 fishing and hunting licenses.

At the present time, national and state authorities are making every effort to keep money in circulation. When a fishing license is purchased, the fee finds its way into channels of industry, principally in the form of labor and material.

The Board of Fish Commissioners relies upon the sale of fishing licenses in carrying through its program to better Pennsylvania fishing. Through early purchase of your fishing license you give those in authority an opportunity to draft the year's program that much further in advance.

Minnows Selective in Choosing Homes

Just as tiny organisms, the daphnia and forms of plankton for instance, are essential for the young of all species of fishes in the inland waters, minnows are necessary for the existence of larger game fish. To retain the proper balance of life in our game fish streams, the stocking of this type of food is highly important. While there are many different species of minnows in Pennsylvania lakes and streams, it has been found that only certain varieties are adaptable to a specified water area. The majority of species of minnows native to warm water streams and ponds, for instance, will not travel in a trout stream. The run chub, bane to the fly fisherman on trout waters, however, seems to be at home equally in high temperature or low temperature water. Trout stream minnows on the other hand seem generally to shun warmer waters. Again, the river minnow is apparently limited to areas of this type. Minnow stocking requires study for proper distribution to suitable areas.

Owing to the fact that the golden shiner, native to many of Pennsylvania's lakes and ponds, reproduces at a time of the year when its young may readily be taken as food by young bass and other game fish, it is most widely distributed.

Fly fishing isn't hard to learn, and practice will soon make you a first-rate caster.



KETTLE CREEK IN TIOGA COUNTY

TROUT THRIVE TODAY IN HIGHER WATER TEMPERATURE

Radical changes have occurred in many Pennsylvania trout streams during the past 25 years. Trout are being stocked successfully in waters today that a quarter of a century ago were not suitable for these splendid game fish. Development of a strain of trout to withstand higher water temperatures has undoubtedly been a saving factor in preserving Pennsylvania's fine trout fishing.

To designate, through a series of figures, the highest water temperatures under which brook or brown trout will thrive would be extremely difficult. A determining factor is the flow in a stream. It is a known fact that volume or water flow will compensate for higher water temperature. Sluggish or slow-moving streams carrying a high temperature will not support trout because the current or exchange of water is not sufficient to insure the fish enough air for their respiration. A faster-moving stream, where the water pours over rocks and falls, having the same temperature approximately as the sluggish stream, may be an outstanding trout stream.

BIG CARP TAKEN ON LITTLE BEAVER CREEK

Eighty pounds of carp, one of them weighing 32 pounds, were taken during a day's fishing on Little Beaver Creek, in Beaver County, last season, according to Warden J. H. Simmons, of Rochester. This unusual catch was made by "Cap" Wynn, a deputy game protector from Chester, West Virginia. The 32-pounder, Simmons writes, was one of the largest carp ever taken from this stream.

Bass fishing on the Little Beaver was also good. Mr. Jeffreys from Bridgewater caught a bass weighing 4½ pounds near the point at which the carp were taken. While patrolling the North Branch on Little Beaver on opening day, Simmons writes, he met a youthful angler who had taken five nice bass by 9 o'clock in the morning.

If you want information on catfish fishing, it might be wise to consult Harry Tompkins and Harry Munson, of Houtzdale. Special Warden Dave Dahlgren, of Phillipsburg, informs the ANGLER that Tompkins and Munson were recently awarded diplomas for being the most scientific catfish fishermen in their section of the state.

The 1934 fishing season has started. Already the great sucker run is under way. Next month, trout fishing will be in the angling limelight, and from July 1 to November 30, bass, pickerel, and wall-eyed pike will occupy the fisherman's thoughts. 1934 is crammed full of possibilities for sport astream. Why not keep abreast of Pennsylvania fishing and the work of the Fish Commission through PENNSYLVANIA ANGLER? Fifty cents enclosed with the attached coupon will bring you this publication for one year.

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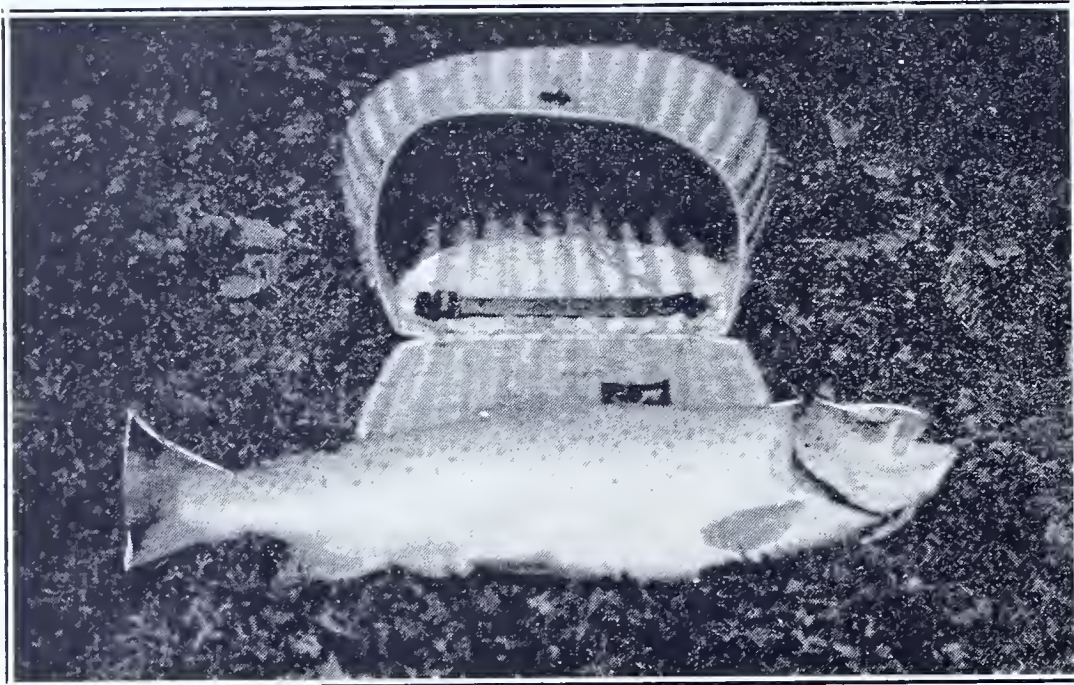
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HERE ^{A_ND} THERE IN ANGLERDOM



BROWN TROUT, WEIGHT 5 POUNDS, 6 OUNCES, CAUGHT BY EVERETT LEICHT, IN VANDERMARK BROOK, PIKE COUNTY

Cold weather apparently does not upset the feeding habits of fall-fish. Word has been received from Warden R. C. Bailey that L. F. Hedges has been taking large numbers of these fish on the Allegheny River near Starbrick. In four trips he has taken ninety fall-fish.

Southwestern Pennsylvania has been having its share of good winter sucker fishing, writes Warden Sam Henderson, of Greensburg, Westmoreland County. Sucker streams in that section have been yielding good catches. Henderson said that on an average, catches ranged from eight to 12 fish to a fisherman.

The Allegheny River has come into its own as one of the best fishing streams in Pennsylvania. Varied catches were frequent last autumn. A typical creel of this type was taken by Jim and Al White, of Corydon, according to Warden J. Albert Johnson, Bradford. In a day's fishing, these anglers caught 16 black bass, seven of which averaged 16 inches in length, eight rock bass, and four crappies. George Burns, of Bradford, caught a fine yellow perch, 13½ inches in length.

High water at Cross Fork, Potter County, early last trout season did not prevent J. N. Piatt, Pittsburgh attorney, from landing a dandy brown trout from this famous North Tier stream. His catch measured 17½ inches, and was taken on a minnow.

Sucker fishing in southeastern Pennsylvania was excellent during the month of January, according to Warden Del Broadbelt of Pocopson. Exceptional catches were made on the Brandywine Creek and the West Branch of the Brandywine Creek from the Delaware state line to the headwaters. Sucker catches were also made in Buck Run, White Clay Creek, and Chester Creek. Recent cold weather has retarded sucker fishing somewhat in this section, but great catches are anticipated during March and early April.

Twin Lakes yielded 17 bass, weighing from one to three pounds, to three Carbondale fishermen, according to Warden Frank Brink, Milford. The anglers making this catch on the famous Pike County lake were Prof. Joseph W. Mannion, Richard Munley, and Gregory Dynedy.

Crawford County catches of game fish last season were uniformly good, according to Special Warden J. S. Cannon. Carl Bremer, North Pittsburgh, caught three largemouth bass, two of them weighing three pounds apiece, and the other two pounds in French Creek. Three largemouth bass, averaging 3½ pounds apiece, were taken in Conneaut Lake by Dr. Little, of Pittsburgh. Two days fishing in Conneaut yielded 15 largemouth and smallmouth bass to Durant Zuchslag. The fish weighed from one to 2½ pounds each.

Boy Convinced That "Trout Went Home"

Warden Anthony Lech, of Shenandoah, tells a good one that occurred while stocking Little Catawissa Creek with brook trout. Aiding in the planting was a little boy from Girardville. Lech, when he approached the youngster, who had just carefully released a can of fine trout in the stream, found him somewhat puzzled.

"What's the matter, son?" he asked.

"Tell me, warden," came the reply, "where do those trout come from?"

"Why, from Bellefonte, but what has that to do with it?" Lech wanted to know.

"Well, then," the boy said gravely, "they went right back home. When I turned 'em loose they went upstream just as fast as they could."

Lech explained in detail that this certainly could not be, but the youngster was not convinced.

"No, sir, mister," he said, "those trout will be back in Bellefonte by tonight. They know where they came from, and I know they are going home because Bellefonte is up that way, and they went right toward it."

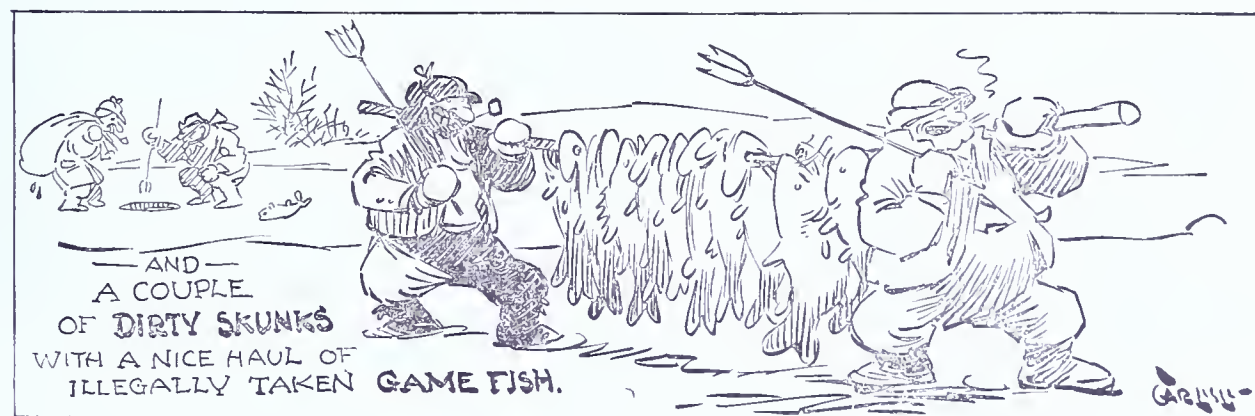
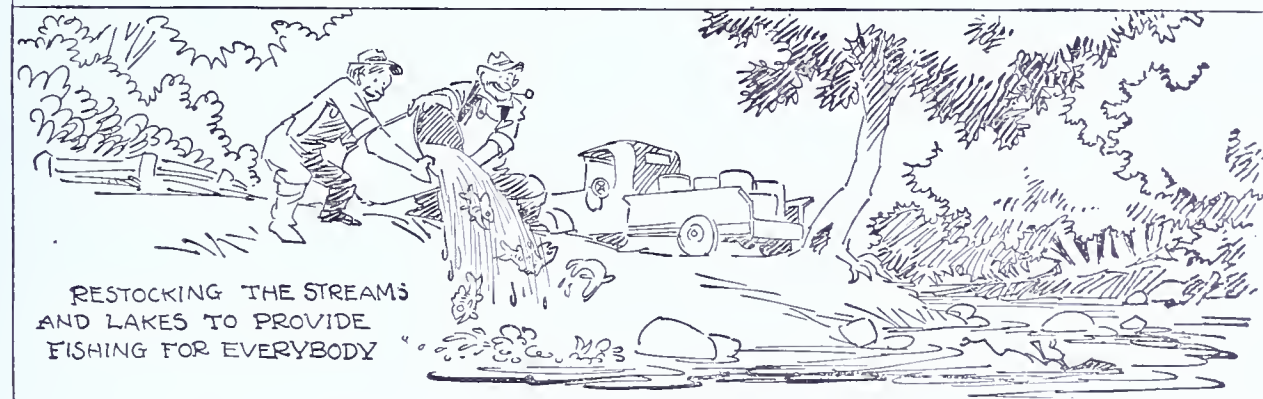
In northeastern Pennsylvania, the yellow perch holds the winter fishing limelight. Warden Joseph Podboy, of Forest City, reports great perch fishing on Heart Lake, near Montrose, Susquehanna County. Three Luzerne County anglers recently caught 35 perch weighing 22 pounds.

Now that sucker fishing is occupying first rank in the thoughts of the fishermen, let's hear about your catches for the "Here and There" page. Just drop the editor a line, telling where they were caught, how big they were, and who caught 'em. The ANGLER welcomes contributions on fish and fishing in Pennsylvania.

Kenneth Fagan, Carlisle, recently caught ten fine suckers while fishing in Conodoguinet Creek, Cumberland County, according to Warden George James.

One of the largest rainbow trout caught in Pennsylvania waters last season was taken by Louis Paulen, Sr., of Scalp Level, writes Warden Bill Keebaugh, Fulton County. The rainbow, 27 inches in length, fought for two hours before it was landed at the Loyldell Dam.

The Sowers and the Reapers



—Courtesy Harrisburg Telegraph

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SUCKER Fishing Time
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PENNSYLVANIA ANGLER



A CREEL OF BROOK TROUT—PRETTY BUT TOO MANY

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EDITORIAL

Poor Sportsmanship Menace to Fishing

I have said repeatedly, in addressing groups of sportsmen, that the cost of poor sportsmanship is entirely too high in Pennsylvania. Thousands of dollars spent annually by the Fish Commission in enforcing the Fish Code would, if available for the hatching and raising of fish, greatly increase our present distribution. In order that a small percentage of the fishermen, the group who wilfully violate the fish laws, be curbed, we are forced to expend each year a great portion of our income in protection. One violator, who takes fish by gig or net, destroys enough of the life in our streams to furnish fine sport for hundreds of fishermen. He is a menace to the conservation movement; he represents the vandal element that, if unchecked, would soon make fishing a forgotten sport in Pennsylvania. In a true sense of the word, he is a thief, for his booty consists of fish that the sportsmen, through their license money, have placed in the streams. The motto of a vast majority of our sportsmen today is "Crush the Violator." When he has been driven from our streams and lakes,

a great forward stride will have been made in fish conservation.

Violation on a wholesale scale, however, is not the only factor that enters into the high cost of protection. Petty violation in many sections must be checked. It is this type of violation, and much of it is without justifiable cause, that causes the expenditure of a considerable part of the fisherman's money in protection. Much of it is unwarranted, and I believe that a considerable percentage of the cases reported are due in large part to thoughtlessness. Certainly no true sportsman would wilfully keep trout under the legal size of six inches, or bass under the size limit of nine inches, for he must realize that in so doing he is injuring not only the future of his own sport but the future of the sport of others. Petty violation of this type, it is evident, is inexcusable.


Opening of the trout season, on April 16, finds thousands of fishermen on our mountain and meadow streams. First day of the season is invariably a gala occasion for Pennsylvania anglers. A fine spirit of comradeship, and general consideration for the other fellow mark the opening day. Certainly, on this occasion, poor sportsmanship has no place astream, and the majority of our fishermen who invade the trout waters rightfully resent any display of it. Today, as never before, the sportsmen are pulling together to achieve a common objective—better fishing and hunting. Taking of undersize trout, careless tossing back into the water of fish not legal size, and the fishing of small nursery streams in which few trout above six inches are to be found, are frowned upon as practices. It is inevitable that general adoption of the code of good sportsmanship by the fishermen will most effectively bar the violator from our fishing waters.

The fisherman, in a final analysis, is guardian of his sport. I believe that we must constantly keep in mind an ideal of fair play to make his guardianship most effective. That ideal may be attained only when every angler is a self-constituted protector of fish life, willing to adhere strictly to the regulations governing fishing. Of course, this theoretical ideal may never be attained, but every fisherman who adopts the code of good sportsmanship is bringing that much nearer its realization.

There is no reason, in my mind, why any fisherman, when he sees an instance of wilful violation of the fish laws should hesitate to report the violator immediately. The man who breaks the law is helping to defeat the very purpose for which the fishing license is issued—betterment of Pennsylvania fishing through stream stocking and protection. Until he is curbed in his practice, we must work under a handicap in our efforts to improve fishing. Undoubtedly, violation would decrease on our trout waters if our anglers reported such cases promptly. License buttons are numbered, and it is comparatively simple to secure the number and report it promptly to one of our protectors. This cooperation is vital. Sometimes fishermen may hesitate to report such cases because they dislike the thought of legal proceedings. By simply reporting the incident, however, they are in no way involved and the checkup work is left with the warden.

One of the most significant factors in the growth of the conservation spirit with our sportsmen, is a tendency on the part of many trout fishermen to disregard the present size limit of six inches on trout, and to take no fish under seven or eight inches in length. Then, too, there is a growing tendency to fish for trout with the artificial fly, certainly one of the most effective means for conserving undersize fish. And finally, sentiment is constantly increasing against the fishing of small nursery streams, where even six-inch trout are rare. These are encouraging omens in the drive for better fishing.

It is my hope that this year will mark a great forward stride in our fish conservation program. With solid support from the fishermen, stream improvement on approved waters should be carried vigorously forward. Linked with enthusiastic support of the fish laws, the stream improvement campaign should cause 1934 to go down in Pennsylvania fish conservation annals as a banner year. To achieve this objective, we need the unqualified backing of every licensed fisherman.



Commissioner of Fisheries.

THE BROWN TROUT

THAT amazing fish, the brown trout, has, during its comparatively brief stay in Pennsylvania waters, caused probably more discussion among fishermen than any other introduced species. Condemned on the one hand, by anglers who hold the native brook trout on a pedestal, as a cannibal and a destroyer of the brook trout; championed by another group as a fish of rare fighting qualities and a credit to any stream it inhabits, the status of the brown trout is unique. The fact remains that the brownie is here to stay. It has found in many Pennsylvania waters an ideal home, and during recent years has won a host of friends in the fishing fraternity. Rising in an arc of golden brown to the fly, wary in feeding, and a savage fighter from the moment it is hooked until it is taken, it ranks today as one of Pennsylvania's leading game fishes.

Brown trout were first introduced to Pennsylvania waters in 1886. Three years earlier, Herr Von Behr, President of the Deutsche Erei Verein, had made the first shipment of brown trout eggs from Germany to the United States. These eggs were consigned to the United States Hatchery at Northville, Michigan. Hatched at Northville, the fry from this shipment were planted successfully in the Pere Marquette River in northern Michigan. In 1883, another shipment from Herr Von Behr was received, and the eggs were hatched at the United States Fisheries Station at Northville and the New York State



Hatchery at Caledonia. Another gift of eggs was sent by Von Behr to the United States Fish Commission in 1884, and in the same year, ten thousand eggs were received from England. Most of the fry from the English shipment were planted in waters of Long Island.

When originally introduced to trout streams of the United States, the brown trout was popularly termed the Von Behr trout; later, it became known as the German brown trout, and finally, brown trout. In Germany it is known as the Bach forelle.

The Loch Leven trout, a species very closely resembling the German brown trout, first made its appearance in this country from Scotland in 1885. A consignment of Loch Leven eggs was received in January of that year from Sir James Gibson, Maitland of the Howietoun Fisheries at Sterlingshire, Scotland. After being repacked at the Cold Spring Harbor hatchery in New York, they were reshipped to Iowa, Minnesota, and Maine, and to a private club in Herkimer County, New York.

The first brown trout eggs to be hatched by the Fish Commission were from a shipment consigned to the United States Bureau of Fisheries from Germany. These eggs were received at Corry hatchery in 1886 through the courtesy of Professor Spencer F. Baird, United States Commissioner of Fisheries. A portion of the fry were planted in Pennsylvania waters, and some were retained at Corry as brood stock.

A Vaunted Ancestry

The beauty and gameness of the brown trout have been praised by European anglers for more than a thousand years. Writing in the fifth century, Ansonius commented strongly of the beauty of this fish. Izaak Walton, patron saint of angling, won it a host of friends. And in 1496, Dame Juliana Berners, authoress of *The Treatise of Fysshynge*, declared her fondness for it in no uncertain language. "The trougte," said the gentle prioress, "for by cause he is a right deyntous fysshe and a right fervente

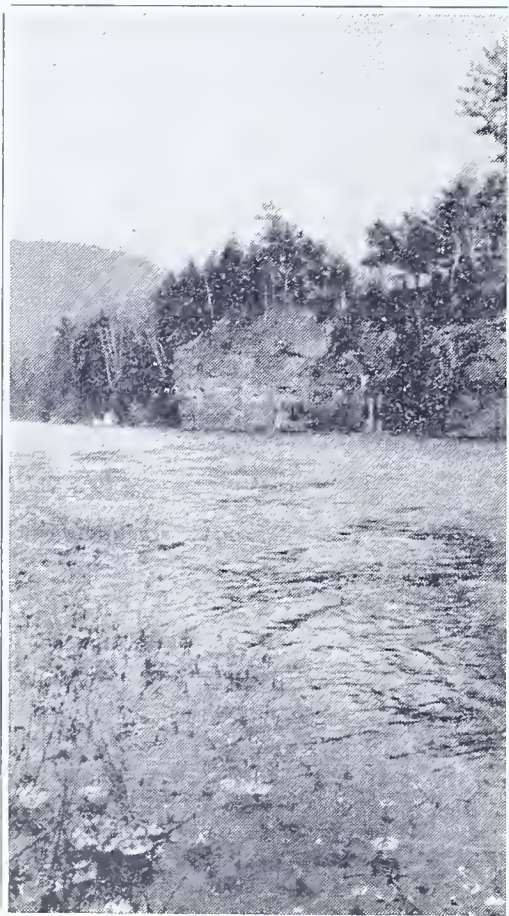
byter * * * From Apryll till Septembre ye trougte lepythe; theune angle to him."

Page after page by early writers of prose and poetry who lauded the qualities of this fine game fish might be quoted. Every phase of its swift movements, the courageous fight it makes when hooked, and the picturesque streams of the Old World in which it lived furnished subject matter in abundance for those who found in the brown trout a fish of rare game possibilities.

General Characteristics

In appearance, the brown trout, especially after it has attained a length of ten inches, is stocky. Head, body, and the adipose fin, that flesh-like projection back of the dorsal or back fin, are marked with numerous red and black spots. The black spots, circular and sometimes X-shaped, frequently have a pale border. On the front of the dorsal fin and the anal fin, the fin just behind the vent, a pale yellowish margin is usually present. Generally, the black spots are rare beneath the lateral line, most of them being present on the upper part of the body of the fish. The body color is determined to a large extent by food and water conditions. Usually it is brownish or brownish black. In adult male brown trout, the jaws are pronounced, and in very old fish frequently hooked. Triangular in shape, the vomer (front part of the roof of the mouth) has a crosswise series of strong teeth. Two alternating series of teeth are present on the shaft of the bone. While the tail of a young brown trout is slightly forked or notched, it is almost square in fish over ten inches in length.

Food and its effect on fish growth is vividly illustrated in the instance of the brown trout. Its natural tendency is to develop to great size. Afforded ample forage and range, it may attain a weight of twelve pounds or over. Three brown trout taken in Pennsylvania waters last season exceeded eight pounds in weight. The largest, taken on Fishing Creek, Clinton County, weighed nine pounds, one ounce, dressed. When introduced to the virgin waters of New Zealand during



WATER ON PINE CREEK,
POTTER COUNTY, FAMED
FOR ITS BROWN TROUT
FISHING

Alex W. M. M. Edmunds

IN PENNSYLVANIA

the latter part of the nineteenth century, the rapid growth of the brown trout was amazing. It is said that by 1900, the weight average of trout taken from New Zealand rivers approximated 10 pounds.

Just as striking as their rapid growth where food is plentiful is the arrest in development of brown trout when they are planted in waters having a limited food supply. If dependent chiefly on insect life that may fall upon the water, which is necessarily a seasonal food supply, the size average of brown trout from streams having this type of available forage frequently does not exceed nine or ten inches. For this reason, the Fish Commission has classified, as approved brown trout streams, waters offering abundant range and food supply.

Research at the Fish Commission's hatcheries has revealed that brown trout fry, during the first months of their growth, develop more slowly than do brook trout fry under the same conditions. When the young fish have attained a length of six inches, however, their growth is exceedingly rapid.

In 1883, when the brown trout was introduced, low temperature water was believed essential to the growth of brook trout, and, in consequence, many of the warmer water trout streams were stocked with the imported trout. Through a constant program of brook trout propagation in Pennsylvania, however, a strain of hatchery brook trout was evolved that will stand water temperatures up to 70 degrees, or slightly above. This means that both species will thrive in waters of approximately the same temperature.

During an interval of four years, stocking of brown trout was discontinued. Last year marked resumption in stocking, and during 1933 over 179,000 brownies, ranging in size from six to twelve inches, were distributed.

Habits

The brown trout is a wary feeder. Frequently it will not start rising to the fly until a short time before dusk, and the rise may not last longer than ten or fifteen minutes. If it is taking the fly, however, it apparently loses some of its instinctive caution, and when an artificial of the right pattern drops to the water, it strikes with a rush. To fish a stream in which brown trout predominate, an angler often may cast for half a day without a strike. But when the rise starts, the action is so fast that it more than compensates for an afternoon that has been unrewarded. This tendency of brown trout in feeding is usually well known by anglers who fish favorite brown trout waters. Often they do not arrive at the fishing grounds until nearly dusk, when, experience has taught them, the brown trout rise should occur. Of course, to time the rise of a fish as temperamental as the brownie is impossible. At times it may come, as in the instance of brook trout rises, in the middle of the day. Again, early morning may produce the right feeding hour. It may be that weather conditions have a great deal to do with the feeding of this wary fish. At any

rate, to fish for it successfully requires patience and study devoted to any particular stream in which it abounds.

By preference, the brown trout apparently seeks its lair beneath shelving rocks or overhanging banks during the heat of the day, moving into the feeding shallows or riffles when evening approaches. Large brown trout, in particular, seem to do most of their feeding at night, and in night fishing the big fellows are often taken. It should be emphasized that brown trout well over twenty inches do not rise freely to the fly. Evidently, at this stage of their development, they prefer larger food, and minnows make effective bait for them. An exception to this preference for larger forage in big brownies is found when the so-called shad flies or May flies are on the water in Penn's Creek, Spring Creek, and other noted central Penn-

sylvania brown trout streams. At that time, some giant brownies are taken, for the female shad fly, heavily laden with eggs, is apparently a tempting morsel that even a mammoth brown trout cannot resist. Shad fly time comes to these streams generally in late May or early June, and lasts for not more than ten days. Early morning and late evening fishing usually produce good catches. The natural insect, female, is used in fishing, as it is large enough to impale on a small hook. Sometimes, three or four of the flies are placed on the hook at the same time.

Shad fly fishing entails considerable study on the part of anglers who find during this period their red letter days of the entire trout season. The flies are generally caught without difficulty early in the morning, on foliage near the shores of the stream. When the first insects appear on the water, tiny swirls are to be observed here and there indicating feeding trout. Some veteran anglers

make it a practice to stand well above a pool in which a good trout is known to be, dropping at short intervals one of the insects on the water. The first three or four flies may be disregarded, but often a tiny dimple on the water marks the passing of the fourth or fifth fly as it is sucked beneath the surface. When the trout is coming steadily, the angler baits the hook, and soon the battle is on. Artificial shad flies, if good life-like imitations, also are effective in taking trout during shad-fly time.

Fishing for the brown trout in England, it is said, has been brought to a fine science. Expert fly fishermen on English streams carry with them a complete fly-tying outfit. Locating a large fish that is rising, they find the particular fly on the water that it is taking, and then make a life-like imitation of the original. Often their casting is lim-



A GREAT CATCH OF FIGHTING BROWNIES

ited to one fish, until it has definitely quit feeding or has struck the lure.

In fishing Pennsylvania streams for brown trout, it is well to locate a pool in which some large trout are known to be and then wait until they have started to feed. Often, a giant brown trout will select as home a pool in which the current has undermined an overhanging bank, or a location near a tangle of brush, logs and tree roots. When hooked, one of its most probable first attempts to break away will be a savage lunge toward the debris, an attempt that unless checked carefully, may bring the angler's tackle to grief.

Matching wits with a cunning brown trout that has successfully eluded the efforts of fishermen to capture it for a number of years is productive of unusual thrills for the angler. And in this fighting, hefty trout from the waters of Europe, Pennsylvania's followers of the creed of Izaak Walton find a foe worthy of the best of fishing skill.

PYMATUNING RESERVOIR

By **Oliver M. Deibler**
Commissioner of Fisheries



FORESTS AND WATERS PHOTO

BIRD'S-EYE VIEW OF PROPOSED RESERVOIR AND SURROUNDINGS

A VAST new lake, Pymatuning, is now in formation in northwestern Pennsylvania. To our great army of fishermen, completion of the Pymatuning Reservoir is of momentous importance. With a shoreline of 70 miles, a total area of 16,420 acres, and a water capacity of 64,275,000 gallons, this giant artificial lake, when filled, will be the largest inland body of water in Pennsylvania. Of its total area, about 5000 acres, or one-quarter of its acreage, is in the state of Ohio. The reservoir is located in Crawford County, and its primary objective is to serve as a storage area for sufficient water at all seasons of the year for domestic and industrial use in communities on the Beaver and Shenango rivers.

Pymatuning is a Delaware Indian word meaning "The Crooked Mouthed Man's Dwelling Place." The name of the Shenango River, rising in the great Pymatuning Swamp, is also of Indian origin, "Chenango," meaning "Bull Thistle." Covering 10,400 acres, the swamp now being flooded is located about 40 miles south of Lake Erie, and with an elevation of 1000 feet above sea level, is 430 feet higher than Lake Erie.

The following facts concerning the reservoir should be of interest to fishermen. Its tributary streams drain an area of 160 square miles. The total length will be 16 miles, average width, 1.6 miles, greatest width, 2.2 miles, maximum depth, 35 feet, and length of shoreline, 70 miles. The main dam spans the Shenango River near the Crawford-

Mercer County line, about one and a half miles above Jamestown. It is of a type known as rolled earth embankment, and its total length, including the road and spillway, is about 2400 feet. The maximum height is 50 feet. Pymatuning is regarded as one of the best examples of water conservation in the United States, according to the Department of Forests and Waters.

Let us compare this new lake with four other bodies of water in Pennsylvania and New York. Prior to Pymatuning's construction, Lake Wallenpaupack in Pike and Wayne Counties was the largest lake in the state. When flooded, it will cover an area nearly three times as large as that of Wallenpaupack, but will contain a water volume slightly under that retained by Wallenpaupack. In area it will be 18 times larger than Conneaut Lake in Crawford County. In comparison to Pymatuning's shoreline of 70 miles, Chautauqua Lake, a famous summer resort in New York state, has a shoreline of 39 miles; the Ashokan Reservoir, part of New York City's water supply, has a shoreline of 40 miles, and Lake Wallenpaupack, a shoreline of 45 miles. Conneaut Lake's shoreline is seven miles. Chautauqua's total area is 13,568 acres, the Ashokan area, 8,700 acres, Wallenpaupack, 5,760 acres, and that of Conneaut, 928 acres.

Clearing the Pymatuning Swamp in preparation for flooding was a gigantic undertaking. Brush and timber in an area of almost 8000 acres had to be cut, five miles of State highways were relocated, 25 miles of township roads were submerged, and two

and one-half miles of railroad embankments were raised. The construction work was supervised by Chief Engineer Charles E. Ryder, and George S. Beal, chief of the Bureau of Dams, Department of Forests and Waters. Clearing operations were under the direction of Ralph J. Ferris, field engineer. The reservoir comprises two basins, separated by the Pennsylvania Railroad and the State highway to Linesville. The railroad and highway have been located side by side on a raised embankment, which serves as a secondary dam for the body of water known as the upper basin. Now virtually filled, this upper basin, having a somewhat shallow depth, is to be set aside by the Game Commission as migratory bird refuge and wild life sanctuary.

Several factors should combine to make Pymatuning an ideal fishing lake. Its waters will have a fairly constant level, maintained by the dam, and provide abundant range for fish. The area flooded will include great masses of brush and other organic matter richly productive in organisms that serve as a basic food supply. Aquatic vegetation so essential in providing forage and protection for fish life should also find in the rich black swamp land an ideal source of growth.

Primarily, our research to the present time indicates, the reservoir will be most suitable for largemouth bass. The largemouth, a splendid game fish, finds in dense underwater forests of aquatic vegetation, sunken logs, stumps and brush, a good environment for growth and increase in number. And since it is an established fact that the growth, not only of bass but other game and food fish, is dependent upon the basic food supply of small aquatic organisms, it is probable that mammoth largemouth bass will be taken from Pymatuning in years to come. Lake Gordon, in Bedford County, with a wealth of forage available, has had the distinction of yielding record largemouth bass in recent years. Splendid catches of these game fish have also been made in Lake Wallenpaupack.



LARGEMOUTH BASS SHOULD THRIVE IN PYMATUNING

Game fish, however, are not the only concern of the Board of Fish Commissioners in the stocking of artificially created bodies of water. First of all, the forage fishes must be established. Minnows, of course, come under this classification. After the minnows have become abundant, and with the vast amount of potential food available their growth in number and size should be rapid, game fish such as the bass and wall-eyed pike may be introduced. Included in the stocking program for Pymatuning are other popular species of fish, including sunfish, yellow perch, and catfish. When Pymatuning has become, as it assuredly will become, one of the recreational centers of western Pennsylvania and Ohio, the expert angler who tries his skill for bass and other game fish, boys, the fishermen of tomorrow, and others

will fish its water. It is therefore essential that the fishing be varied, or, in other words, that catches of sunfish and other panfish be just as numerous as catches of game varieties.

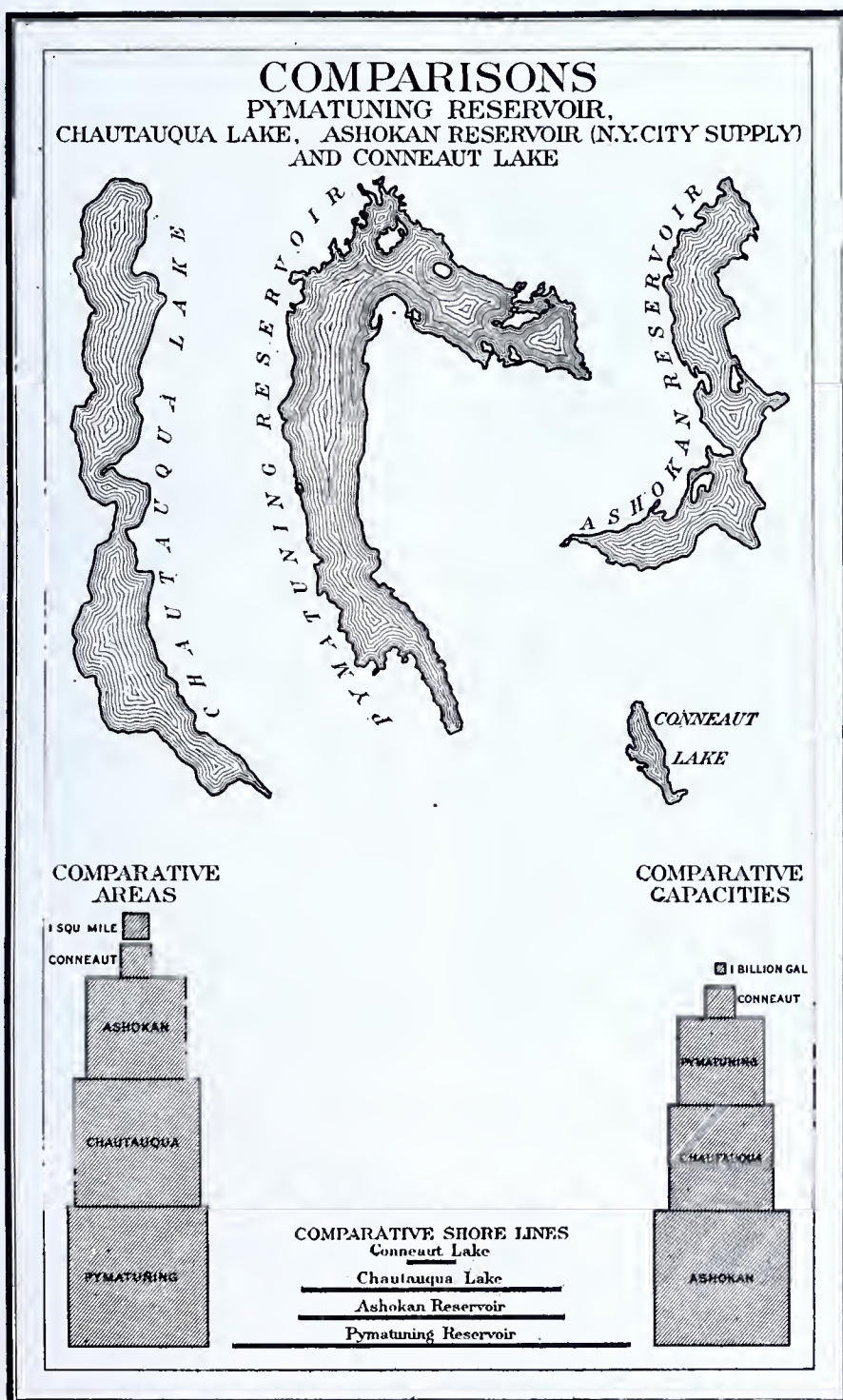
It has been the Fish Commission's policy, in stocking Pennsylvania waters, to strive always to maintain a suitable balance of nature. Just how well this policy has worked out is evident from the splendid fishing afforded in Lake Gordon, Bedford County. Gordon was stocked heavily with minnows, sunfish, catfish, suckers, and other species in addition to the largemouth bass and wall-eyed pike. As a result, in this ideal home, the rate of growth of largemouth bass has been amazing. Bass weighing seven pounds and over have been taken, and it has been conservatively estimated that some of these

giant game fish, noted for their tackle-breaking habits, have attained a weight of ten pounds. Lurking deep down, too, are wall-eyed pike of breath-taking proportions. And one of the first things to be observed by anglers who try this popular fishing ground, is the abundance of food present in the shallows near shore. Another example is Lake Wallenpaupack which furnished outstanding fishing in eastern Pennsylvania last year.

Under the balanced stocking program planned for Pymatuning, linked as it is with the vast possibilities of abundant food for fish that will be planted, this lake should rank as one of the greatest fishing grounds on the eastern seaboard. Stocking this year will be conducted on eleven tributary streams in the area now being flooded. As the water level rises, the fish planted will work into the main reservoir from these tributaries.

While the maximum depth of the reservoir will be 35 feet, ridges and other elevations in the area now being flooded will furnish numerous shallows in the main body of water. From a forage angle, these shallows are of utmost importance as they provide minnows, and similar species upon which game fish prey with an ideal breeding ground and protection. Game fish, it may be observed frequently, invade such shallows in quest of food.

The possibilities in this vast new reservoir, from a fish conservation standpoint, are outstanding. Under intensive stocking and protection, Pymatuning should prove an answer to the constant demand for more fishing water in western Pennsylvania. Its completion marks a real stride forward in the better fishing program.



COURTESY FORESTS AND WATERS

Match This One

One evening last trout season, when the May fly or shad fly hatch was on full blast in the Bald Eagle Creek, Tom Mosier, Game Protector in Centre County, had an experience that to date takes rank as the most unique ever reported to the Fish Commission.

Standing on a ledge of rock that dropped abruptly into deep water in one of the big pools, Tom told Warden Dave Dahlgren of Philipsburg, he succeeded in hooking a big brown trout. At the moment, the brownies were rising everywhere in the pool, little swirls marking the spots where the big fellows sucked the flies under, golden flashes as the smaller trout cleared the surface.

Preoccupied with the trout on his line, Tom suddenly felt a thud on his boot. Glancing downward, he saw to his amazement that a trout of about 17 inches had risen at a fly and plunged headfirst into the landing net dangling at his side. He tried to do two things at once, hold the trout on the line, and grab the trout in the landing net, with disastrous results. Slipping off the ledge into water over his head, he lost both fish. Perhaps only brown trout could be responsible for an experience like that.

A WINTER-CAUGHT CARP

While suckers are caught frequently in midwinter, those other bottom-feeders of our inland waters, the carp, are rarely taken. Warden Joe Young of Allentown recently reported the landing of a five-pound carp from the lower waters of the Little Lehigh during February. The unusual catch was made by Stanley Yohanos of Allentown on February 17.

Eugene Bruder of Allentown figures that the purchase of a fishing license pays big dividends. Fishing for suckers in the Little Lehigh during January and February, Bruder caught 300 suckers. Most of his catches were made in the vicinity of Bogert's Bridge.

CREEL LIMIT ON TROUT REDUCED TO 20 A DAY

When you try your favorite trout stream on the opening day of the season, April 16, remember that the Legislature has reduced the daily creel limit per fisherman from 25 trout above legal six-inch size to 20 trout.

The trout season opens officially on Monday, April 16, as the 15th of April falls on a Sunday this year. Trout may be legally taken after 12:01 A. M. Monday, April 16.

LEHIGH SPORTSMEN HOLD ANNUAL SMOKER

The event of the year for sportsmen of Lehigh County is the annual smoker of the Lehigh County Fish and Game Protective Association. Fostered through the years by George Zimmerman, City Controller at Allentown, and secretary of the Association, this affair is looked forward to eagerly by fishermen and hunters in Allentown and vicinity.

At the smoker, held in Allentown last month, prizes for the largest game fish taken by members of the Association were awarded. The largest brown trout taken was 22½ inches in length, 9½ inches in girth, and weighed 3 pounds, 3 ounces. It was caught by Edward Stieska, Allentown, in the Lackawaxen Creek, Wayne County, on a minnow. His prize was a fine trout reel.

Other prize fish and prizes were:

Largest smallmouth bass, caught by Fred Bittner, Allentown; length 19 inches, girth, 10½ inches, weight, 3 pounds, 4 ounces; where taken—North Branch, Susquehanna river; lure, stone catfish. Prize, casting reel.

Largest pickerel, caught by Edward Hofert, Allentown. Length 28 inches, girth 11½ inches, weight 4 pounds, 4 ounces; taken in Lake Wallenpaupack. Prize, complete tackle box.

A yellow perch, 15½ inches long, weighing 22 ounces, and caught in Promised Land Pond by Thomas Kressler, Cementon, captured the prize in the perch division, a casting line.

Second prize in the smallmouth bass division, a casting reel, was taken by a Lake Wallenpaupack smallmouth. The fish, 17½ inches in length, was caught by Nicholas Smeloff, of West Catasauqua, on a spinner. A three pound pickerel, measuring 20½ inches, took second prize in the pickerel division. It was caught by Harry Eckert, Allentown, in Peck's Pond. Eckert's prize was a steel casting rod and reel. A tackle box and minnow pail was the prize for the third largest pickerel. The fish was caught by Charles George, Allentown, in Peck's Pond.

MARCH STOCKING PROGRAM PUSHED

Some idea of the trout stocking program during March, in preparation for the season opening, may be gained from the following reports from three of the Fish Commission's hatcheries. These reports cover only one week.

Brook trout above legal six-inch size were distributed from Pleasant Mount hatchery to streams in Bradford, Carbon, Lackawanna, Luzerne, Monroe, Northampton and Wayne Counties from March 13 to March 21. Streams stocked were Millstone Creek, Bradford County; Big Bear Creek, Aquashicola Creek and Quakake Creek, Carbon County; Gardner Creek, Lackawanna; Harvey's Creek, Luzerne; McMichaels Creek, Cherry Creek, East Branch Tobyhanna, and Aquashicola Creek, Monroe; Hokendauqua, Bushkill and Monocacy Creeks, Northampton County, and Lehigh River, Wayne County.

During the week ending March 24, the new Hunsdale trout farm released brook trout in streams of Berks, Cumberland, Lebanon, Montgomery and Schuylkill Coun-



ED. TARSA, MAHANOEY CITY,
WITH TWO 16-INCH BROWN-
IES TAKEN ON DRY FLY

ties. In Berks County, Trout Run or Powder Valley Run was stocked; in Cumberland, Bird Run, Silver Spring, Alexandria Springs Run, Mt. Rock Run, Cockleys Run, Green Springs, Hogestown Run, Mountain Creek and Big Springs; in Lebanon County, Hammer Creek; in Montgomery, Mill Creek, and in Schuylkill County, Deep Creek, Flicker Creek, Black Creek, and Bear Creek.

Tionesta Hatchery, Forest County, reports distribution of brook trout to streams in Clarion and Forest Counties during the week

An Obliging Snake

Warden Anthony Lech of Shenandoah is responsible for this fish yarn. It seems that Ed Tarsa of Mahanoy City, who is an enthusiastic dry fly fisherman, was trying his luck on the Lehigh River last season, when he observed an eight-inch trout a short distance in front of him in the stream. At the same instant a watersnake made a lunge at the trout, capturing it.

Ed was near enough to the snake to connect with it in a hearty kick. The force of the kick snapped the trout from its jaws and the fish landed on the bank of the stream, where Tarsa picked it up. According to Lech, even Ed's mother hesitated to credit the story. But there you are. It's generally that way with fish stories.

of March 26. In Clarion County, Deer Creek and Toms Run were stocked. Blue Jay Creek, Little Hickory Creek, West Branch Blue Jay Creek and Maple Creek in Forest County were stocked.

AN OLD MAN'S REQUEST

When I die I'll turn to worms—

That's the bait.

In my casket place my rod,

There I'll wait.

Six feet deep is the place for big browns.

All my life I've been dying for one seven pounds.

DICK KROMER.

DISCOUNTS INJURY TO TROUT IN FREEZE-UP

Warden Horace P. Boyden of Wellsboro, Tioga County, recently reported that from his observation, trout in the famous streams of Tioga County were not seriously affected by the intensely cold weather that froze some of the larger streams on the North Tier to a depth as great as 18 inches.

"I have been told that a statement was made recently that our trout streams had frozen to the bottom and that we had lost most of our trout. I think that impression should be corrected. Most of our streams are frozen over, even some of the spring brooks. We had weeks of weather when the temperature ranged from a few degrees above to 34 degrees below zero. However, I have looked over a lot of our approved trout streams in this county, and I don't know of one that has been frozen enough to injure the trout."

A CORRECTION

In the March issue of PENNSYLVANIA ANGLER, it was erroneously stated that the Pennsylvania Federation of Sportsmen's Clubs at their meeting in Harrisburg on February 12 had opposed Sunday fishing.

The Federation did not, however, vote either for or against Sunday fishing as the sportsmen present felt that sentiment on this issue was so divided that the Federation should take no action. As a result, the Sunday Fishing Resolution was tabled by a vote of 64 to 51. It is hoped that this correction will clear up any misunderstanding relative to the Federation's stand on Sunday fishing.

MORE BEYOND

By C. R. Buller

Deputy Commissioner of Fisheries

WHEN the first European settlers landed on the Atlantic coast of North America, they were amazed at the plenitude of wild life and other natural resources. The magnitude of this great unexplored area was astounding and the idea was at once gained that this supply of nature's gifts to its people was inexhaustible.

No thought, whatever, was given to conservation of the wild life. Forests were leveled for the building of homes and to provide areas for farm purposes. Game was killed to provide food and clothing and the choice pelts were used as a barter of exchange for other necessities of life. Fish was used as food and as fertilizer on the newly cleared farm areas. These hardy pioneers of our country were justified in taking advantage of all natural gifts as it was alone through these gifts that they were able to stay and withstand the rigor of the long, cold winter months. In this respect, their minds were at ease as they realized always that there was "more beyond." Like ancient folk-lore, the slogan "more beyond" was handed down from one generation to another and as the population increased and modes of living changed from time to time, this slogan still remained with the result that a tide of wasteful destruction started at the Atlantic coast and crept westward.

Timber was destroyed without a thought of its economic relationship to all things living in the same drainage area. Manufacturing establishments, mining, and oil industries sprang up and proceeded to empty their poisonous effluents into the streams and rivers without any consideration for the inhabitants living on the lower regions of the stream areas. Swamps were drained to provide additional farm areas while those interested in such projects were unmindful of the damage being done to all living matter in the changed region.

A few far-seeing citizens realized the disastrous results from these activities and entered vigorous protests, but they were always met with reply that "there is more beyond." This tide of destruction crept westward until it reached the Pacific coast and then it rolled back over the country like a tidal wave as there was no "more beyond."

While destruction of the natural resources of the country has had an economic influence on almost all industries and this, in turn, has affected the welfare of the people in almost all walks of life, yet these groups so affected have not as yet made any serious steps to conserve what is left or taken any drastic action toward restoration. The sportsmen of the nation, many of whom have only the interest of the conservation of wild life at heart and have nothing financially to gain, must be given credit for changing the sentiment of many of the people toward conservation and restoration of our remaining natural resources.

Just a few pioneer conservationists scattered here and there over the country, were powerless in their lack of numbers to accomplish anything constructive at first; yet these same men were the nucleus of our present-day powerful sportsmen's organiza-



A GILL-NET AND ITS
"SPOILS"

tions who were the means of having created, within most of our states and within the federal government, paid agencies to supervise and plan the restoration and conservation of all forms of wild life.

Pennsylvania, in its virgin state, was richer in natural gifts than many of its sister states, making a fruitful field for the avalanche of destruction which was carried on until its scarred hillsides and denuded valleys resembled the war-torn areas of France and Belgium.

It has been the privilege of almost every outdoor lover to visit sometime in his life the headwaters of a pure, sparkling stream gushing out among towering hills or flowing through virgin forests, and be impressed with the rugged grandeur of the scene and the peacefulness of the surroundings. To many these headwaters seem symbolic of an infant, who gradually grows greater and wiser.

The association of this, or similar scenes, as compared to the devastated present-day hills and valleys, may have been the cause of the inspiration of our citizens to join conservation associations until today Pennsylvania has more organized sportsmen than any other state in the United States.

The strength, loyalty, and enthusiasm shown by these groups at the recent meeting in Harrisburg was an inspiration to all conservation officials and because of this we know that all members of the Pennsylvania Board of Fish Commissioners can tackle their task with a lighter heart.

FISHING YESTERDAYS

A TRIBUTE TO BROOK TROUT

The favoritism in which the charr or brook trout is held by Pennsylvania anglers has endured for generations. In the report of the State Commissioners of Fisheries for 1892-93-94, we find the following comments concerning it.

"No truer words were ever spoken than those uttered by an eminent ichthyologist when he declared that 'no higher praise can be given to a salmonoid than to call it a charr.' It came by the name of trout through the Pilgrim fathers who, when they first saw it in New England, mistook it for the same fish they knew in their own Devonshire streams. Had they come from the north of England or from Scotland and been more observing, the error would in all likelihood have never been made. But brook trout or speckled trout or charr, or whatever name may be applied to the fish, it needs no description. There are few anglers who are not well acquainted with this most beautiful and graceful of fishes. It is more eagerly sought for and, by the majority of fresh water sportsmen in the East, prized more than any other member of the finny tribe, while the epicure regards its flesh as unsurpassed for delicacy and richness of flavor.

"Unquestionably, the pure cold water and the usually picturesque character of the streams in which the brook trout live has something to do with making this fish a general favorite among sportsmen, but undoubtedly its splendid game qualities and other inherent good points have done more than anything else to achieve this end. The merest tyro in the art of fishing who has killed but a few trout, while he may not agree, will forgive the angler who dogmatically declares it to be the gamiest fish that swims.

"A well known angler in Pennsylvania once declared that to play a speckled trout gave him a higher and keener sense of delight than to hook and play a lordly black bass. 'Both,' he said, 'make a glorious and intelligent struggle for life. But there the comparison ends. The trout fights like a trained boxer, the other like a savage. One arouses all my admiration and the other my blood. With one I feel as though I was engaged in a friendly contest, with the other almost as though it was the life of either myself or the bass.'"

Brush that borders a trout stream should never be cut. It provides shade and cover essential in any good trout stream.

PLAN FINGERLING DISTRIBUTION

Fishermen of Westmoreland County and special wardens attended a meeting in Greensburg on March 2 to formulate plans for distribution of fingerling trout this spring, according to Warden Sam Henderson of Greensburg. Stream improvement to increase the carrying capacity of trout waters in the county was also discussed at the meeting.

DAYS ASTREAM

A Section Contributed by Readers of PENNSYLVANIA ANGLER

BACKYARD BASS

By Nicholas R. Casillo

New Castle

FOR an hour or more we had been languidly hauling in numerous three-inch yellow perch and as languidly tossing them back into the pond.

Bill looked at me and smiled grimly. "So, you would insist upon taking our casting rods! Throw a plug into the midst of those sardines and there would be a stampede. They're smaller than most of our worms," he added in disgust.

"Well, whose fault is it that we're here?" I demanded with some heat. "And besides, if you weren't convalescent we'd be somewhere where fish are fish."

"That's it, go on—blame it on my appendix."

And that explained the entirely ludicrous situation. With all of our equipment, including complete bait and plug casting outfits, plugs galore and three kinds of live bait, we sat there gloomily catching miniature fish in a miniature lake.

The "lake," I might explain, was exactly ten miles from town, one mile from a trunk-line highway, two feet from a secondary highway and covered an area of about two acres. Bill's physician had strictly prescribed a drive of not more than twenty miles, and anxious to wet a line, after several weeks confinement, Bill had selected Hidden Lake; the most exposed, accessible and unpromising puddle that I have ever beheld. It is called *Hidden Lake* for exactly the same reason that nearly all of the so-called trout lakes that I know of do not have a trout in them. And never having seen the pond, I had advised the taking along of bait casting rods and a selection of plugs, besides our live bait equipment and sundry baits. Bill scoffed at my "you never can tell," and reiterated that the "hole" contained nothing but yellow perch, a few rock bass and an occasional bullhead. So his brother-in-law had told him.

Frequently, the unexpected will happen; for the wallop packed by that inscrutable, bland and unruffled pond was the biggest surprise of all my fishing experiences and soundly drove home that axiom, "*Try the fishing nearer home.*" Bill was one of those unfortunates who was never satisfied unless he was fishing water with a reputed reputation, until we discovered Hidden Lake. Now he is a super-addict to this new doctrine. In fact, every puddle in this vicinity has been bombarded by his entire array of plugs and baits. And not without success either.

During the summer I had taken three trips to Canadian waters and the fish that I caught (4), were ultra-expensive. Naturally, I made no computations until after that

memorable afternoon and evening at Hidden Lake. Then as a matter of comparison I reckoned that the Canadian fish had cost me \$109 apiece, and couldn't begin to compare in size or in thrill-producing qualities with those caught ten miles from my front door.

Across the pond another brother of the angle was likewise engaged in landing small fish and throwing them back in. By the time that we had gained our second wind the strange fisher began to display signs of exhaustion. Finally, he threw his rod down on the grassy bank, gave vent to a number of unapprehensible words and tried to seek consolation in his pipe.

"What are the critters anyway?" he called over, after glaring at our listless motions for a number of minutes.

"Yellow perch," I answered in some surprise, wondering if he could have been getting anything else.

"Not all of them," was the rejoinder. "Wait a minute and I'll have one for you," he added, snatching up his rod. "It's easier to catch than to describe one."

In a moment he had one and brought it

over for our inspection, and sure enough, it proved to be what I suspected—a young smallmouth. And why we had not caught any while the stranger couldn't keep them from his bait, remains a paradox to this day.

"Bass or no bass!" exploded the disgruntled one, after I told him what the "strange" fish were. "I'm quitting."

After the fellow's departure I turned to Bill and gave him my opinion.

"If the frequency with which he caught them is any indication, there must be a bunch of those little bronzebacks in here. Ordinarily, you know, where there're small fish you will also find larger ones. Guess, I'll try my day and night minnow for a starter," I added with a lot more confidence than I felt.

That worthy cast a scornful look upon me, grunted and threw a wad of worms into the pond in an attempt to inveigle some unsuspecting bullhead.

Quickly assembling my casting rod, I moved out to a tiny point of land about twenty feet from my companion and poised for a cast. Dusk had fallen and the surface was barely rippled by a wispy breeze. Two black mallards, no doubt living in the vicinity, circled the pond. The roar of traffic on highway No. 1 was clearly audible, while a creaky farm wagon trundled its dusty way down the secondary thoroughfare. A bullfrog at the far end of the pond boomed away



TWO BASS FROM HIDDEN LAKE. THE SMALLMOUTH, LEFT, WEIGHED 3 POUNDS, 14 OUNCES

to his heart's content, while Bill went through the utterly surprising motions of pulling his already scant hair and jumping up and down on the hard turf like a big gorilla, as a horde of those famished raccoon perch pounced upon his wad of worms.

The plug landed with a barely audible splash squarely into the middle of the pond. Immediately I was electrified by that never-to-be forgotten "KERCHUNG," elicited by a short-striking bass. Inarticulate, I turned to my companion who had suddenly suspended all activities, and was quizzically looking at me.

"Was that a rock you threw in?" he asked, gruffly.

"Rock—nothing!" I exploded, suddenly finding my voice. "That—was a fish!"

"Ha! ha!—a fish," he railed. "Gwan, catch him," he added, turning away.

On the very next cast, the same fish or another of equal size, struck again and made fast. "WHAM!" he broke water, whereupon Bill gave utterance to some unintelligible blubberings, while my knees suddenly weakened. At this point most fishermen would add: "Man, what a fish!" But, no fooling, this one was.

The shallow water forced the smallmouth to do most of his fighting in the air, so that we saw plenty of him. Well, Bill was too dumbfounded to do anything but stand there in a sort of a daze, his eyes glued to that air-minded bass.

Never had I become entangled with a fish that actually forced me to give it line in spite of all my efforts. And it wasn't because of the fear that the line would break or that the hooks would tear loose. The line was brand new and the manner in which the fish struck indicated that it was securely hooked. With a pull that matched more than I could command, it stripped foot after foot of line as its body flashed just below the surface. The resistance of its broad sides and the unusual pulling angle undoubtedly caused that astounding stress.

Suddenly, it careened through the air, doubled on itself as it came down and then rushed toward me with a breath-taking dash. When I thought that it would most certainly be grounded at my very feet, it exploded from the water, and gave me a close-up of a fighting he-bass; fins distended, gill covers flaring and red eyes flashing; shaking the plug with impressive ferocity.

Upon hitting the water the bass made for a thick growth of weeds, where line, fish and hooks contrived to make an almost inextricable mass. I glanced at Bill and that mortal was still glued to his tracks, registering the most pronounced look of amazement that I have ever seen; mouth agape, eyes bulging incredulously. Then he saw what had developed and like a flash, grabbed the net, plunged into the water like a big moose and proceeded to persuade a very tired but determined bass into it.

"Well, can you imagine that?" he gasped, as he dragged net, weeds and fish shoreward. The pocket scales registered four pounds and eight ounces, and I hardly wondered that Bill repeatedly looked from fish to pond and vice versa. It did seem that proportions were all wrong.

After that initiatory ceremony we both went to work in earnest; and in rapid succession my companion hooked two and landed them. Each fish scaled over three pounds.

"Can you imagine that?" Bill religiously repeated after the netting of each fish.

When he wasn't battling fish Bill would be galloping over to where I happened to be, in response to my calls for help; gasping in pain as he clapped a hand to the newly healed incision in his side.

"I sure will get a heavy dose of adhesions," he would grunt as he happily went about the business of landing a mammoth bronzeback, and always concluding the ceremonies with a "Can you imagine that?"

And when one does take all of the factors into consideration, it was truly difficult to imagine. Picture again, an unposted pond, adjacent to crowded highways, producing bass that rivaled any that I had ever seen. Of course, we wondered how they had gotten into it and more important, how many it contained.



HIDDEN LAKE

Upon a later investigation I observed why the little lake was favored by the fighting smallmouth. There was neither an outlet nor an inlet; indicating a spring-fed condition. The one deep hole, located in the exact center of the pond was eight degrees colder than the surrounding water. Also, it may be safely concluded that wherever the yellow perch is found, food in the form of small fry and minnows also exists. Any bass that could not feel entirely contented in such an environment could be considered foolishly whimsical.

Contrary to all local opinions that the smallmouth and largemouth are never found in close association, Bill's third fish proved to be a golwalloping largemouth. And where could they find closer association than in that two-acre pond? It may be that both kinds were indiscriminately dumped into the pond by some unthinking angler that soon forgot them. But, whatever the explanation, there was no denying that they had thrived amazingly. Let me impress upon you that these bass were not just unusually large fish, but wise, savage, old "mossbacks," so beautifully proportioned as to be a joy to behold. Heavy, massive, and yet, bristling with all the earmarks of racy thoroughbreds. There was none of the "potbelliness" that is usual with most large bass.

But to return to the fishing. By seven o'clock we had had some fifteen strikes and

succeeded in landing eight fish. I must confess that by the time I had landed my fourth fish, I was so excited with elation that I shook like one with palsy. It truly was the most exhilarating sport that I had ever experienced, the kind that one ordinarily reads about, dreams about and hopes, some day, to experience. And here I found it, literally in my backyard. That little unattractive pond, with its treeless shoreline took on a beauty that one always finds in anything possessing character, no matter how unattractive the exterior. Beauty comes from within, as some sage wrote. It certainly opened new vistas of sport; prompting me henceforth to take a fishing chance at all sorts of nondescript ponds, quarry holes and sloughs with which this region abounds.

And always with a feeling of anticipation; seeking the unexpected and frequently finding it.

One night last summer the spirit seized me. For reasons that I only too well recognized, I was restless. Suddenly, I announced to an astonished wife that I was going fishing. It was then after ten o'clock. A clear creek runs at the edge of the residential district and plumb through the business section of town (a city of 60,000). It took me just four minutes to reach the stream's edge, just off of one of the residential streets. I hooked on a luminous floater and cast into a smooth stretch of shallow water. In fifteen minutes I was back home with two nice two-pound bass and a feeling of peace with the world. My fishermen friends who heard of the incident insisted that I purchased those bass. But, I noticed that a lot of them sneaked down to the creek and obtained first-hand information. However, that's another yarn in itself.

Perhaps there's a little, neglected pond or stream near your home, neglected by seasoned anglers because of its nearness to town. Give it a trial and bear in mind that fishing is fishing no matter where it happens to be, and that an urban bass will live up to the best traditions of its brothers of wilder waters. Mayhap, you'll get a surprise. Who knows?

CENTRAL PENNSYLVANIA TROUT STREAMS

PENN'S Creek, Spring Creek, the Loyalsock, Fishing Creek, the Black Moshannon, and Young Woman's Creek are streams that conjure up a picture of ideal trout fishing for the anglers of Pennsylvania. In that section of the state with its northern fringe in upper Lycoming County, extending southward through the mountain country of Clinton, Centre, and Union Counties are trout waters equal in many respects to the great streams of the North Tier.

This area boasts some of the largest trout streams in Pennsylvania. For the angler who likes fishing wide shallows and riffles, and who delights in making long accurate casts with the dry fly in reaching rising trout, waters of the calibre of the Loyalsock, Fishing Creek, and Penn's Creek are ideal. These streams are heavy producers of fighting brown trout in their lower reaches, while near the headwaters brook trout hold sway. They are particularly appealing during late May and June when hatches of flies are on the water.

Many of the smaller streams in the north central counties are swift-flowing mountain brooks, cutting their way through wilderness ravines choked with brush and laurel. They offer great fishing for the angler who prefers to find his trout fishing in remote mountain country, and who is willing to overcome the handicap of interfering brush in making his casts into those hard-to-reach pools where brilliantly colored brook trout lurk. Typical of these waters are Rapid Run in Union County, some of the larger branches of Young Woman's Creek in Clinton, Garrity Run, Laurel Run, and Mountain Branch, in Centre, and the upper waters of Larry's Creek and the Loyalsock in Lycoming County.

April fly fishing on practically all of the north central streams is necessarily limited in scope. While the first hatches of flies usually appear on the water earlier than is the case with North Tier waters, early spring finds them generally well above normal levels. In fishing for brown trout, particularly the big fellows of Penn's Creek, the Loyalsock, and Fishing Creek, early fishermen rely largely on minnows and worms as lures.

Warden H. J. Bressler of Williamsport lists the Cahill and the Stone as two of the favorite lures in the fly category on the Loyalsock. That old favorite, the Royal Coachman, often is effective later in the season. On the lower waters of Slate Run in Lycoming County, the brown trout in May and June usually respond well to the Cahill. To designate all of the good flies for fishing Lycoming waters is out of the question. It is advisable, therefore, for any fisherman to have a fairly wide selection of flies in his book when he tackles these famous streams.

Warden George Sperring of Lock Haven, in commenting on the flies that rank well



WHERE GIANT BROWN TROUT LURK IN THE DEEP POOLS,
PENN'S CREEK, UNION COUNTY

for Clinton County fishing, suggests that it is advisable for a fisherman who intends to fish Young Woman's Creek, Fishing Creek, or other streams in that territory, to stop in at a sporting goods store in the vicinity and find just what flies are being taken at the particular time. He stresses a fact well known to fly fishermen, simply that a fly which proved good at a certain time last season may be ineffective this year at the identical time. Fly fishermen on more than one occasion have had strikes aplenty on one fly early in the morning of a day astream and found the fish disregarding that particular fly in the evening. Of course, it is advisable to have in the fly book a fair assortment of standard flies such as the hackles, coachman, stone, cahill, Golden Spinner, duns, and gnats during the fly season.

When fishing Penn's Creek, White Deer Creek, Spruce Run, and Weikert Run in Union County, writes Warden Arthur Snyder of Mifflinburg, a good selection of flies is of first importance. Early in the season,

when these streams are generally high, worms and minnows are relied upon. Penn's Creek is at its best during later season when the shad fly hatch appears. Several years ago, some of the record brown trout of the season from this stream were taken on locusts.

Centre County trout waters, most of them fed by deep seated limestone springs, hold the spotlight with the best trout producers in the state. Warden Dave Dahlgren of Philipsburg, in addition to listing famous Spring Creek, Elk Creek, Pine Creek, and South Fork of Beech Creek, ranks the Black Moshannon and Six Mile Run as ace trout waters in Centre. He emphasized the fact that later fishing on the Moshannon and Six Mile with flies is favored. Dry flies popular with anglers who fish the Moshannon are the Gordon, Cahill, Queen of the Waters, King of the Waters, and the quill flies such as the ginger quill and blue quill. In the wet fly category, the hackles and the coachman are good. On Six Mile Run, Dahlgren says, effective flies are the Cahill, Gordon,

Flight's Fancy, the male and female Beaver Kill and the various quills. Natural insect lures such as crickets and grasshoppers also are good on this stream at times.

Lycoming County Waters

The fame of the Loyalsock, Lycoming County's largest trout stream, is not limited to Pennsylvania. Anglers who have fished it hail from many other states, for it is one of the largest trout streams on the eastern seaboard. Traversing a valley not over one-half mile in width, this stream offers fifty miles of good fishing water. In the lower stream, from Hillsgrove to Montoursville, a distance of 25 miles, smallmouth bass and brown trout compete for the food supply. Good roads make it easily accessible at most points. Highway route 115, leaving route 111 at Montoursville and connecting with route 220 at Dushore at the headwaters of the Little Loyalsock, follows the stream much of the way.

In the Little Loyalsock, brook trout fishing is excellent. ~~Last year~~, with resumption of the brown trout stocking program, the Fish Commission stocked brownies in the lower stream, that is the section below Hillsgrove, while brook trout were distributed to the upper waters.

Lycoming Creek, in its upper waters, also ranks as a good trout stream. It may be fished by following highway route 111 from Williamsport, turning to route 14 at Trout Run and following it to Roaring Branch.

Streams in Clinton

Clinton County boasts Young Woman's Creek and Fishing Creek, two of the outstanding trout streams in Pennsylvania. From Fishing Creek last season was taken the largest brown trout reported to the Fish

Commission, a mammoth brownie tipping the scales at nine pounds, one ounce, dressed.

Rising at Tea Springs in East Sugar Valley, Fishing Creek flows through farmland and woodland for a distance of 38 miles, all of it excellent trout water. The stream course runs west from Tea Springs to Tylersville, north from Tylersville to Lamar, a distance of eight miles, then east for a distance of eight miles through the Nittany Valley to its point of juncture with Bald Eagle Creek. It may be reached over highway route 220.

In many respects it is like Spring Creek in Centre County, which is ranked as one of the greatest trout streams in the east. Fed by limestone springs having a constant flow, it is about equally divided between riffles and deep pools. Not only is it stocked heavily with trout, but it offers many natural advantages from the angle of forage and range. Trout taken as a rule are extremely heavy in girth and while brook trout predominate, brownies are caught frequently.

Of the larger mountain streams in Pennsylvania, Young Woman's Creek holds top rank as a trout producer. Heading in the famous Black Forest, it flows through mountain country for a distance of 20 miles to its point of juncture with the West Branch of the Susquehanna River at North Bend. It is accessible by auto over highway route 120, and its headwaters in the Black Forest may be reached from the old Coudersport Pike.

Young Woman's Creek has two large branches, one known as the Right Hand Branch, the other as the Left Hand Branch. Both branches and the main stream are heavily stocked with brook trout. Brown trout also are to be found in its deep pools, and nice mixed creels are taken occasionally.

Located about six miles from North Bend on the Right Hand Branch is a beautiful club maintained by the Renovo Lodge of Elks. Accommodations may be had at the club for any length of time, and anglers frequently make it their headquarters in fishing the stream. Another fascinating angle to fishing Young Woman's Creek is an abundance of game in the territory it drains. To see deer or even bear while fishing is not an unusual occurrence. While some sections of the Branches are brushy, it is possible to fish a fly effectively in many of the pools.

Union County Trout Streams

Wide variety in trout fishing is afforded by the streams in Union County. Penn's Creek, recognized as one of the best known trout streams in the state, has many long deep pools and shallows affording abundance of forage and cover for its fish. It is classified as a brown trout stream under the survey, and thousands of brownies above legal six-inch size have been stocked in it since the close of last season. In the extreme upper section, for a distance of several miles below Penn's Cave, brook trout have been planted. The outstanding brown trout water extends from Weikert in Union County, to the Mifflin County line. In the vicinity of the Paddy Mountain tunnel, swift water, giant boulders and steep banks characterize the stream. In addition to brown trout distribution by the Fish Commission, the Paddy Mountain Fish and Game Association has conducted a splendid stocking program in Penn's Creek. Last October, the Association released 3,750 brown trout, varying in size from three to six inches, from their trout raising ponds at Weikert.



Penn's Creek in Union and Centre Counties may be reached by train at Weikert, Cherry Run, Paddy Mountain, Ingleby, and Coburn. By auto, it is easily accessible over highway routes 45 and 888. Leaving route 45 at Laurelton State Village, follow route 888 to Laurelton, Weikert and Cherry Run. If turning from route 45 at Woodward, take the road leading to Coburn, turning to another route leading to Ingleby. Good fishing is to be found on Penn's Creek either above or below Coburn.

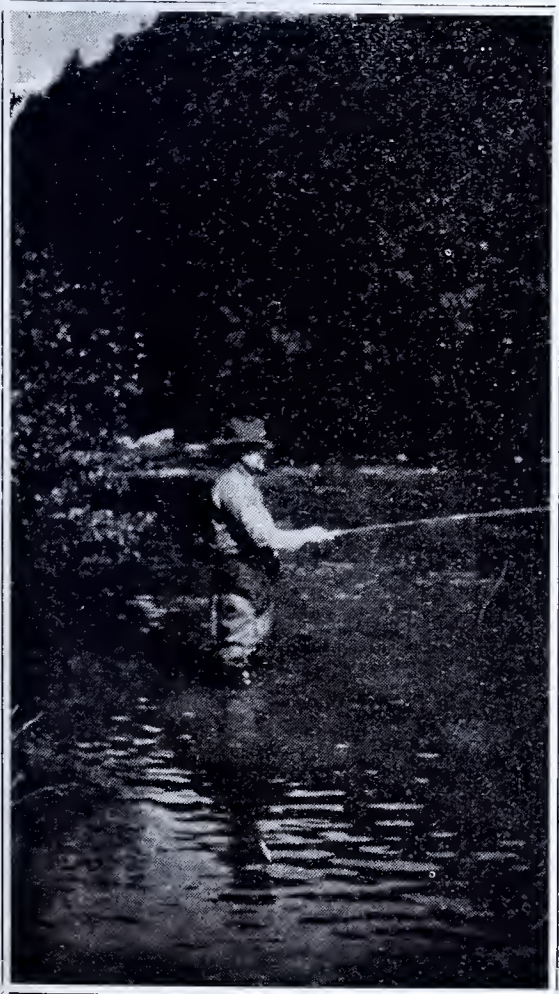
Laurel Run, also classified as a brown trout stream, is one of the larger tributaries of Penn's Creek. Rising in Laurel Park, near Glen Iron, Union County, it parallels route 45 through the Seven Mile Narrows and flows through the town of Laurelton. It ranks as a favorite with brown trout fishermen, and over most of its course is a mountain stream. To reach it by railroad, take the Lewisburg and Tyrone Railroad to Rutherton. By auto it may be reached via Mifflinburg to Laurelton on route 45.

Buffalo Creek, from the Willows at Mifflinburg to its headwaters, also ranks as an excellent trout stream. It has several good tributaries, the North Branch, Rapid Run and Spruce Run. It can be reached over route 45 via Mifflinburg. The North Branch, with most of its course in the Bald Eagle State Forest, can be reached by auto via Mifflinburg and Buffalo Mills. Rapid Run, one of the best brook trout streams in Union County, parallels route 95 over its entire length, and can be reached by way of Mifflinburg and Forest Hill. Spruce Run is accessible by way of Mazeppa and Sun Rise Church or School House.

Included in the larger trout waters of Union County is White Deer Creek. Rising in Centre County, the stream is easily reached in most sections by auto from source to its point of juncture with the West Branch of the Susquehanna River at White Deer. Above the White Deer Mountain Water Company dam, brook trout fishing is excellent, while below it, the brownies predominate. In fact, brown trout are caught over the entire length of the stream. To fish White Deer, go to Watsonstown on route 14, then follow route 975 to White Deer post office. Information relative to the better fishing water may be secured at this point.

Centre County

Centre County, with a list of trout streams headed by picturesque Spring Creek, the Black Moshannon, and Six Mile Run, ranks second to no trout fishing area in the state. Fed by limestone springs, its trout waters are consistent in flow, and offer an ideal combination of swift water and deep pools for the angler. (Please turn to next page)



FLY FISHING IS SPORT SUPREME ON FISHING CREEK, CLINTON COUNTY

omit

To fish Spring Creek, drive to Bellefonte, Centre County. The stream, which flows through the heart of the town, may be followed upstream by road for a distance of four or five miles to the Fish Commission's stream improvement and trout raising project now nearing completion. For the fly fisherman, this beautiful stream, flowing through woodland and meadowland, is ideal. Some of Pennsylvania's finest trout, brook and brown, are caught from it each year.

As a trout producer, the Black Moshannon also is a favorite with Centre County fishermen. Twenty-six miles long, the Moshannon has its point of juncture with the Big Moshannon Creek just where highway route 53 crosses the larger stream. In the fast water of the lower stream, numerous deep pools are to be found. Of the better tributaries, Roek Run, Myers Run, Halls Run, and Benner's Run afford good fishing. Deep pools predominate on that section of the Moshannon from Roek Run to Gordon, and as the stream flows slowly through this section, dry fly fishing for brown trout is particularly effective. Brook trout are taken frequently, but brown trout apparently have found in this stream an ideal home, and exceptional catches of brownies are made.

The Black Moshannon is accessible by auto over route 53 from Philipsburg, Centre County, by traveling northeast to the Moshannon Mountain, a distance of about 16 miles. It can also be reached at the Red Bridge or at Gordon by leaving route 53 at Moshannon, turning left at the cross road running west from Snowshoe. Gordon is located about 12 miles above the mouth of the stream. The headwaters may be reached over the Rattlesnake Pike from Philipsburg, after a drive of 10 miles to Kepharts Dam. The Black Moshannon, incidentally, is a mountain stream.

Six Mile Run, a swift mountain stream, belies its name, as it really has 12 miles of fine fishing water in its course. Hutton Run and Corbin Run, its largest tributaries, also provide good fishing. It is accessible from various points. Leaving Philipsburg, follow the Rattlesnake Pike eastward, or from Port Matilda on route 5, turn right at the top of the mountain and take the C.C.C. road into Camp 119 at the headwaters. It can be reached from Winburne or Munson on the Munson Pike, which crosses the stream at the mouth. C.C.C. workers recently completed another road that parallels the stream for a distance of between four and five miles. This road runs from Camp 119 to the Rattlesnake Pike.

Of the trout streams in the central counties, it has been possible only to list outstanding waters in this article. This area offers so much variety for the trout fisherman that it is certain during the 1934 season to attract thousands of anglers from all sections of the state.

Sometimes in fly fishing, a trout is hooked in the tail or even in the back. Often the cause for this lies in the rise of the trout to the fly. On more than one occasion, trout playfully come to an artificial, slapping at it with their tails. In quick response to the rising fish, frequently the hook is set resulting in one of these freak catches.



THE LACKAWAXEN IN WAYNE COUNTY

List of Trout Streams Stocked During 1933-34

For the information of fishermen, the following trout streams in the various counties were stocked with trout above legal size preparatory to the season opening on April 16.

Adams—Toms Creek, Carbaugh Run, Little Marsh Creek, Conewago Creek, Conococheague Creek, East Branch of Little Antietam Creek.

Armstrong—Glade Run, Mill Run or Rinker Run, Hauling Run, North Fork of Pine Creek, Serubgrass Creek.

Beaver—Big Traverse Creek, Brady Run or North Brady Run.

Bedford—Buffalo Creek, Yellow Creek, Bobs Creek, Deamer or Kinzey Gap Run, Beaver Creek, Potter Creek, Three Springs Creek, Sherman Valley Run, Yellow Creek, Cove Creek, Deeters Run, Shavers Creek, Cumberland Valley Run or Shobers Creek, Raystown Branch Juniata River, Will Creek, Buffalo Creek.

Berks—Pine Creek, West Branch Perkiomen Creek, Northkill Creek, Trout Run, Moselem Creek, Mill Creek, Hays Creek, Northwest Branch Perkiomen Creek, Indian or Indian Corn Creek, Scott Run, Back Creek, Furnace Run or Blue Creek, Roek or Sawmill Run, Mill Creek, (flows through Game Refuge), Rauseh Creek, Mill Creek (flows through Sanatorium Property), West Branch of Pine Creek.

Blair—Bald Eagle Creek, Canoe Creek, Shaw Run, Vanseoyoc Creek, Big Fill or Woomers Run, Poplar Run or Boles Creek, Clover Creek, Sandy Run, Blair Gap Run, Bells Gap Run, Tipton Run, Piney Creek, Frankstown Branch Juniata River.

Bradford—Schroder Creek, Daggetts Creek, Mill Stone Creek, Seeley Creek, South Creek.

Bucks—Cooks Creek or Durham Creek, Beaver Run, Tinicum Creek.

Butler—Little or West Branch of Buffalo Creek, North Branch Bear Creek, Bear

Creek, Chauncey Run or Chanees Run, McMurrays or Magee or Cemetery Run, North Branch Slippery Roek Creek, Little Connoquenessing Creek, Silver Creek.

Cambria—Big Laurel or Dysart Run, Findlay, Bakers or Trout Run, South Fork Little Conemaugh River, Beaverdam Run or Beaver Run, Beaverdam Run or Big Killbuck Run, Bens Creek, Mudliek Run, Hinkston Run, Rogues Harbor Run, Clearfield Creek, Chest Creek.

Cameron—Sinnemahoning Portage Creek, Sterling Run, Portage Creek or Cowley Run, Lushbaugh Run, East Branch of Hicks Run, Hicks Run, Hunts Run, Wykoff Run, Liek Island Run, North Creek, Brooks Run, Driftwood Branch, Clear Creek, Mix Run.

Carbon—Wild Creek, Fawn Run, Pohopoco Creek, Aquashicola Creek, Mauch Chunk Creek, Stoney Creek, Quakake Creek, Hayes Creek, Hickory Run, Big Bear Creek, Hunter Creek, Mud Run, Pine Run, Lesley Run, James Run.

Centre—Pine Creek, Potters Stream or Laurel Run, South Fork of Beech Creek, Spring Creek, Logan Branch, Elk Creek, Rapid Run, Little Fishing Creek, Penns Creek, West Branch Big Run, Mountain Branch, Pine or Sterling Run, Six Mile or Forge Run, Galbraiths Gap Run, White Deer Creek, Synagogue Stream, Cherry Run, McBrides Gap Run, Laurel Run, Big Sandy Run, Wallace Run, Roaring Run or Dry Run, Marsh Creek, Fields Run, Yost Run, Wolf Run, Winklebeek Run, Cedar Creek, Cold Stream, Sinking Creek, Black Bear Run, Hostler Dam on Half Moon Run, Bald Eagle Creek, Poe Creek.

Chester—White Clay Creek, Two Log Run, Birch Run, Valley Creek, Waln Run, Chester Creek, Lyndell Creek, Valley Creek, French Creek.

Clarion—Buck Creek, Toms Run, Deer Creek, Little Toby Creek, Mahles Run, Ryner Run, Paint Creek or Licking Creek, Little Coon Creek, East Sandy Creek, Little Piney Creek, Mill Creek or Big Mill Creek, Piney Creek.

Clearfield—Curry Run, South Witmer Run, Trout Run, Montgomery Creek, Medix Run, Wilson Run, Beaver Run, Bennetts Branch Sinnemahoning Creek, West Branch Montgomery Creek, Bell Run, Anderson Creek, Mountain Run, Mosquito Creek, Sandy Run, Whiskey Run, Hackenbury Run, Gifford Run, Sawmill Run, Lick Run, Each Branch Mahoning Creek, Little Sandy or Little Sandy Lick Creek, Montgomery Creek, Moshannon Creek, Little Laurel or Beech Run, Bigler or Hughey Run, Fork Run, Laurel Run, Little Clearfield Creek, Lick Run, Sugar Camp or Laboard Run.

Clinton—Big Fishing Creek, Tangascootack or Scootack Creek, Right Branch Young Womans Creek, West Branch Young Womans Creek, Chatham Run, Cedar Run, Cooks Run, Lick Run, Big Run, Antis Creek or Rauchs Creek, Rattlesnake Run, Backer Run or Baker Run, Long Run, Beaverdam Run, Trout Forks or Trout Run, Hammersley Fork, Drury Run, Hyner Run, Cherry Creek, Paddy Run, Shingle Branch, Birch Island Run, Swamp Branch of Big Run, Middle Branch of Big Run, Long Run, Bald Eagle Canal, Queens Run, Left Hand Branch of Young Womans Creek, Livaney Run, Benjamin Run, Bald Eagle Creek, Pine Creek.

Columbia—West Branch Fishing Creek, Coles Creek, East Branch Fishing Creek or

Cumberland—Big Springs Run, Oldtown Run, Mountain Creek, Silver Springs, Bird Run or Kato Run, Green Springs, Hogestown Run, Cockleys Run, Alexandria Spring Run or Lines Run, Mountain Rock Run, Yellow Breeches Creek, Letort Spring.

Dauphin—Clarks Creek, Rattling Creek, West Branch Rattling Creek, East Branch Rattling Creek, South Fork Powell Creek, Stoney Creek.

Delaware—Ridley Creek.

Elk—Bear Creek, Maxwell Run, Big Run, Kersey Run, East Branch Clarion River, Laurel Run, Trout Run, Medix Run, West Branch Spring Creek, Hoffman or Nigger Run, Bogy Run, Vineyard Run, Wilson Run, South Branch Straight Creek, Bear Run, Belmuth Run, Wyncoop Run, Island Run, Mohan Run, Hunter Run, Hicks Run, Straight Creek, Mix Run, Big Mill Creek, West Branch Clarion Creek.

Erie—Little Conneautee Creek, Crooked Creek, Riley Run, Bear Run, South Branch French Creek, Beaver Run, East Branch LeBoeuf Creek, Black Creek or Boyds Run, Trout Run, Thomas Run, Darrow Brook or Finn Brook, Hubble Run or Alder Run, Hatch Hollow Run or Alder Run.

Fayette—Markelton Run, Big Sandy Creek, Big Meadow Run, Buck Run, Mill Run, Durbar Creek, Little Sandy Creek, Big Sandy Creek.

Forest—Coon Creek or Big Coon Creek, Spring Creek, Salmon Creek, Beaver Creek, Watson Branch, Hunter Run, Coleman Run, Blue Jay Creek, West Branch of Blue Jay Creek, Tubbs Run, Prather Run, The Branch

Run, Red Run, Falling Springs, Trout or Birch or Dickey Run.

Fulton—Little Anghwick Creek, Brush Creek, Little Brush Creek, South Brush Creek, Wooden Bridge Creek, Spring Valley Run, Nine Mile Creek.

Huntingdon—Laurel Run, Standing Stone Creek, East Branch Standing Stone Creek, Tatman Run, Black Log Creek, Shavers Creek, Saddler Creek, Licking Creek or West Licking Creek, Little Trough Creek, Barree Run.

Indiana—Little Yellow Creek, South Branch Twolick Creek, Little Mahoning Creek, Mudlick Run, Laurel Run, Brush Creek.

Jefferson—Laurel Run, Coder Run, North Fork Red Bank Creek, Manners Run, Clear Creek, Cathers Run, Callen Run, Rattlesnake Run, Little Mill Creek, Little Sandy Creek, Bank Creek, East Branch Mahoning Creek, Big Run, Five Mile Run, South Branch of North Fork of Red Bank Creek, Laurel Run, Mill Creek, Clear Creek, Camp Run, Hiram Run, North Fork Red Bank Creek, Manners Run.

Juniata—Lost Creek, Willow Run, Licking Creek, Liberty Valley Run, Horse Valley Run, Big Run.

Lackawanna—Lehigh River, Roaring Brook, West Branch of Wallenpaupack, Wilcox Creek, Pond Creek.

Lancaster—Little Conestoga Creek, Swarr Run, Hammer Creek, Donegal Creek, Gladfelters Run, Middle Creek, Unicorn Creek or McCulleys Creek, Seglog Creek, Rock Run or Sawmill Run, Big Chickies Creek, Charles Run, Indian Run, Fishing Creek, Muddy Creek, Climbers Run or Steinman Run, Stewarts Run or Bonemill Run.

Lawrence—Taylor Run, Slippery Rock Creek, Big Run, Hottenbaugh Creek, Little Neshannock Creek.

Lebanon—Hammer Creek, West Branch Hammer Creek, Evening Branch or Gold Mine Run, Switz Creek, Indiantown Run, East Branch Hammer Creek, Bachman Run, Millback Creek, Big Chickies Creek.

Lehigh—Little Lehigh River, Big Trout Run, South Branch of Saucon Creek, Trout Creek, Cedar Creek.

Luzerne—Harveys Creek, Nescopeck Creek, Bear Creek, Arnold's Creek, Bolward's Run, Little Shickshinny Creek, Bowman's Creek, Shades Creek, Phillips Creek, Maple Creek, Wright Creek, Linesville Creek, Wapwallopen Creek, Meadow Run, Pine Creek, Little Wapwallopen Creek, Stony Run, Lehigh River, Huntingdon Creek, Wapwallopen Creek, Hunlock Creek, Kitchen Creek.

Lycoming—Hogland Run, Roaring Branch, White Deer Hole Creek, Grays Run, Rock Run, Little Pine Creek, Larrys Creek, Muncy Creek, Mill Run, Nippenoise Creek, Spring Creek, Big Run, Lick Run, English Run, Blockhouse Run, McMurrin Run, Trout Run, Little Bear Creek, Upper Pine Bottom Run, Trout Run, Fourth Gap Creek, Black Hole Creek, Roaring Branch, Pleasant Stream, West Mill Creek, Plunkett Creek, Wallace Run, Lycoming Creek, Slate Run, Loyalsock Creek.

McKean—Marvin Creek, Portage Creek, Kinzua Creek, Chappel Fork, Fuller Creek, Potato Creek, Two Mile Run, South Branch Kinzua Creek, South Fork of Kinzua Creek, Seven Mile Run, West Branch Tuneneguent Creek, North Branch Sugar Creek, Sugar Run, Willow Creek, West Clarion Creek, East Branch Tionesta Creek.

(Please turn to next page)



LAUREL HILL CREEK IN SOMERSET COUNTY

Grassy Hollow Creek, Lick or Deer Lick Run, Mugser Run, Little Fishing Creek, Roaring Creek, Fishing Creek.

Crawford—Federal Creek, Middle Branch of Sugar Creek, McLaughlin Run, Muddy Creek, East Branch of Muddy Creek, Middle Branch Sugar Creek, Patrick Run, Gravel Run, North Branch Woodcock Creek, Sterns Run, North Branch Middle Branch of Sugar Creek, Brannon Run, Kelly Run, Thompson Run, Mosley Run, Negus Run or Westgate Run, Wolf Creek or Run, Woodcock Creek, Little Sugar Creek.

or North Salmon Creek, Hunter Run, Johns Run, Maple Creek, Otter Creek, East Hickory Creek, Little Hickory Creek, Ross Run, Fork Run, Little Salmon or Indian Doctor Creek, East Branch of Millstone Creek, Millstone or West Branch Millstone Creek, Little Coon Creek, West Hickory Creek, West Branch Caldwell Creek.

Franklin—Conococheague Creek or East Branch Conococheague Creek, East Branch Little Antietam Creek, Dennis Creek, Pinola Run or Roe Run, Trout or Gunters Valley Run, Broad or Bear Valley Run, Carbaugh

Mercer—Little Sandy Creek, West Branch of Wolf Creek, Black Run, Wolf Creek, Lackawannock Creek, Probst Run, Big Run, Sandy Creek, Deer Creek, Little Neshannock Creek, West Branch Little Neshannock Creek, Johnson Run, Mill Run, East Branch of Wolf Creek.

Mifflin—Treaster Valley Run, Kishacoquillas Creek, West Branch Kishacoquillas Creek, Laurel Run, Havice Creek, Tea Creek, McKinley Run, Musser Run, Strodes Mill Run, Licking Creek, Swift Run, Brookland Run, Long Meadow Run, Penns Creek.

Monroe—Big Bushkill Creek, Leavitts Branch, Forest Hill Creek, East Branch Tobyhanna Creek, Buckwa Creek, Mill Creek, Tobyhanna Creek, Scott Run, Pensyl Creek, McMichaels Creek, Pohopoco Creek, Middle Creek, Cherry Creek, Dotters Creek, Tobyhanna Creek, Pocono Creek, Aquashicola Creek, Lehigh River, Brodheads Creek, Paradise Creek.

Montgomery—Mill Creek.

Northampton—Saucon Creek, Indian Creek, Little Martins Creek, Hokendauqua Creek, Bushkill Creek, Monocacy Creek, Martins Creek.

Perry—Laurel Run, Liberty Valley Run, Browns or Fowlers Run, Shermans Creek, Hustons or Shafers Run, Montour Run, McCabes Run or Canadas Valley Run.

Philadelphia—Wissahickon Creek.

Pike—Red Rock Creek, Twin Lakes Creek, Sawkill Creek, Mill Rift Creek, Kellam Creek, Big Bushkill Creek, Dingman Creek, Saw Creek, Shohola Creek, Raymondskill Creek, Indian Ladder Creek, Little Bushkill Creek, Wallenpaupack Creek, East Branch Wallenpaupack Creek, Lackawaxen River, Raymondskill Creek.

Potter—Nelson Run, West Branch of Pine Creek, Genesee Fork of Pine Creek, Cross Forks Creek, East Branch of Fishing Creek, Corbet Branch of West Branch of Pine Creek, Little Kettle Creek, South Fork of First Fork or Sinnemahoning Creek, West Branch of Portage Creek, First Fork of Sinnemahoning Creek, Long Run, Cross Forks Creek, Middle Branch Genesee River, Fishing Creek, Eleven Mile Creek, Cowanesque River, Trout Run, Nine Mile Run, South Branch Oswayo Creek, Genesee River, Cushing Creek, Kettle Creek, Bailey Run, Sartwell Creek, East Fork of First Fork of Sinnemahoning Creek, East Branch Portage, West Branch of Genesee River, Lyman Branch of Pine Creek, Luddington Branch of Genesee River, Dry Run, Allegheny River, Pine Creek, Oswayo Creek, Kettle Creek, Mill Creek.

Schuylkill—Little Catawissa Creek, Evening Branch, Black Creek, Pine Creek, Beaver Creek, Wolf Creek, tributary to West Branch Schuylkill River, Wolf Creek, tributary to Mill Creek, Spiess Run, Deep Creek, Sugar Loaf Run, Bear Creek, Mahoning Creek, Fishing Creek, Flicker Creek, Big Run, Neifert Creek, Locust Creek, Rouchs Creek, Kombs Creek, West Branch Fishing Creek, Rattling Run, Tumbling Run.

Snyder—North Branch Mahantango Creek, Mitchells Run, Trout Run, Kuhn Hooven Run, Aigler Run, Krepp Gap Run, Swift Run.

Somerset—South Fork of Benns Creek, Beaver Dam Run, Drakes Run, Iser Run, Deeters Run, Breastworks Run, Negro Glade Run, Flagherly Creek, Piney Run, South Fork Benns Creek, Brush Creek, Jones Mill Run, Clear Shade Creek, Whites Creek,

Piney Run, Wills Creek, Laurel Hill Creek, Whites Creek.

Sullivan—Lewis Creek, West Branch Fishing Creek, Sullivan Branch, East Branch Fishing Creek, Rock Run, Muncy Creek, Rocky Run, Lick Creek, Kettle Creek, Ogdonia Creek, Hogland Run, Lopez Creek, Pigeon Creek, Mill Creek, Elk Creek, Glass Creek, Double Run, Pole Bridge Run, Black Creek, North Branch Mahoopany Creek, Little Loyalsock Creek, Loyalsock Creek.

Susquehanna—Gaylord Creek, Starrucca Creek, Harding Creek, East Branch Lackawanna River, West Branch Lackawanna River, Tunkhannock Creek, East Branch Tunkhannock Creek, Riley Creek, Butler Creek, Tunkhannock Creek, Harmony Creek.

Tioga—Kettle Creek, Phoenix Run, Asaph Run, Big Run, Bailey Creek, Tioga River, Mill Creek, Elk Run, Fall Brook, Long Run, Francis Branch, Cedar Run, Pine Creek.

Union—White Deer Creek, North Branch of Buffalo Creek, White Spring Run, Half Way Run, Spruce Run, Slide Hollow Run, Sheesley Run, Henstep Run, Corl's Run, Rapid Run, Buffalo Creek, Beaver Run, Sand Spring Run, Bear Run, Spring Creek, Laurel Run, Weikert Creek.

Venango—East Branch Sugar Creek, Hemlock Creek, Little Sandy Creek, Porky Creek, Mill Creek, Panther Creek, Cherry Run, Pit-hole Creek, East Branch Sandy Creek, Mill Creek, Stewarts Run, Lower Two Mile Run, Upper Two Mile Run, Horse Creek, Little Scrubgrass Creek, Pithole Creek.

Warren—Wilson Run, Jackson Run, Irvine Run, Thompson Run, Dunn Run, Farnsworth Creek, Little Brokenstraw Creek, Coffee Creek, Hemlock Run, Upper Sheriff Creek, Lower Sheriff Creek, Matthews Run, Mead Run, Satler Run, Ackley Run, Phelps Creek, East Branch of Caldwell Creek, Hosmer Run, East Hickory Creek, Four Mile Creek, Little Brokenstraw Creek, Six Mile Run, Arnot Creek, Ben George Creek, Tidioute Creek, McGuire Run, Perry McGee Run, Tionesta Creek, West Hickory Creek.

Wayne—East Branch of Lackawaxen River, Dyberry Creek, Middle Creek, South Branch Calkins Creek, Starrucca Creek—East Branch, South Branch Equinunk Creek, Shehawken Creek, Waymart Branch Lackawaxen River, Big Branch Dyberry Creek, Crooked Creek, North Branch Calkins Creek, Equinunk Creek, Sad Pond Creek, Beaverdam Creek, Little Equinunk Creek, Calkins Creek, Lehigh River, Johnson Creek, Hollister Creek, Big Branch of Dyberry Creek, Mile Brook, Babbittville Creek, Wallenpaupack Creek, Seventeen Mile Creek, West Branch Wallenpaupack Creek, Lackawaxen River.

Westmoreland—Loyalhanna Creek, Mill Creek, South Fork Mill Creek, Middle Fork Mill Creek, North Fork Mill Creek, India Creek, Roaring Run, Right Branch Furnace Run, Powder Mill Run, Furnace Run, Baldwin Run, Shannon Run, Linn Run, Tub Mill Run, Jacobs Creek.

Wyoming—North Branch Mchoopany Creek, Meshoppen Creek, Mchoopany Creek, Bowman's Creek, West Branch Meshoppen Creek, Riley Creek, Leonard's Creek, Beaver Run.

York—Otter Creek, Orson Creek, Toms Creek, Fishing Creek, Leibs Creek.

Birthday Trout

Forty years ago, P. E. Decker of Athens, Bradford County, determined to have trout for breakfast on the morning of April 17, his birthday, until he had passed the 70-year mark. And with the exception of one year, when he was called to Milwaukee, Wisconsin, on business, writes Myron Shoemaker, warden of Laceyville, Mr. Decker has realized that ambition. Last April 17 marked the 70th birthday, so he extended the resolution to include this trout season.

Practically all trout for the birthday breakfasts were caught from Shrader Creek in Bradford County and Pleasant Stream, Lycoming County, Decker's favorite streams. He is an enthusiastic conservationist, and when enough trout for the meal have been taken, immediately returns home.

Many more happy fishing trips for those birthday breakfasts, Mr. Decker.

In fly fishing for trout, try for accuracy first. Extremely long casts are not necessary in taking a rising trout if your approach to within casting distance is cautious enough.



Seth Says

I been a-hearin' some argyment down at the store about how these here cold snaps we hed this winter hurt our speckled trout. Now I ain't figgerin' to be a jedge on this freezin' o' trout runs, but I figger that there's a heap o' nonsense in some of it. Take on our run, fer instance. It's a mountain run, startin' 'way back in the gap, an' reachin' fair size when it comes inter the meadows near my place.

Well, sir, when I hears this argyment goin' 'round, it didn't jest strike me as right. So right after thet bitter cold spell we hed, I checked up a little. Found some ice in the dead water on some o' the holes, fair thick it was, mebbe ten inches in places. But the riffles was clear o' ice, an' a good current was runnin' under the ice. Then, about a week later, I went up in the gap to look fer some mountain cattle, an' the upper run didn't show a sign o' anchor ice. Thet speaks well fer the eggs o' trout thet spawned last fall.

I reckon it ain't jest right to figger a fish as smart as a speckled trout ain't got sense enough to care fer itself when water freezes. They kin manage somehow ter find a place under a bank in some deep hole, an' cold mountain water don't freeze so deep as to hamper 'em fer room. Ef there wasn't open water on the riffles, mebbe there'd be reason fer us to think they'd die fer want o' air. Anyways, I'm a-lookin' fer better trout fishin' this year than in a long time. Jest the other day, I saw some dandies in the run. I'll be a-lettin' the boys know ef I get thet big feller I saw movin' upstream ter spawn last fall. Here's wishin' 'em luck an' good fishin'.



EARLY SEASON TROUTING ON WEST BRANCH OF PINE CREEK, POTTER COUNTY

POTTER COUNTY STREAMS NOT HURT

Warden G. Dewey Grant of Galeton, Potter County, who knows the trout waters in his territory like a book, further backs the belief that the sub-zero weather did not seriously injure approved trout waters in Pennsylvania. Following is his letter, and it's good news for anglers planning to invade the great trout streams of the North Tier after the season opens.

"I have received several inquiries about the effect of the past severe winter on our trout streams and its probable effect on the trout fishing in the coming season.

"Although for a period of over six weeks the ice in the streams did not move out or thaw any, and at times the thermometer registered from 30 to 40 below zero in different sections of the county, the streams did not freeze to the bottom as supposed by some people.

"The trout streams rise at the headwaters from good springs, and all along their course are enlarged by many other good springs feeding them. Many anglers know where these clear, cold springs refresh them while fishing on a hot day."

HE'S JUST A LITTLE FELLER

*He's just a little feller, but he's wishin',
That I'd take him right along, when I go fishin'.
'Cause he has the blood of dad,
And I know I will be glad,
His heart to brighten.*

*He's just a little feller, but he's growin'.
His little legs just waddle, but he's goin'.
Out along the stream with me,
Just to let him watch and see
How they are bitin'.*

*And some day when life is thru,
And I pass to a world that's new,
It's this I'm wishin':
May the God that gave me Jim
Take me, too, to go with Him
Forever fishin'.*

G. G. HILL

When fishing for big brown trout minnows are often used. Rather than carry a live bucket, some minnow fishermen salt them and place them in a damp handkerchief or piece of cloth. By treating them in this way the bait fish are kept firm and suitable for use behind a swivel.

What a Catfish!

Twin Lakes yielded a catfish last summer that had a head ten inches around, and only one eye, according to Warden Frank Brink of Milford, Pike County. And the strange part of it was that the bullhead, 16 inches long, showed never a sign of having originally had the eye that was missing. It was caught by Frank Hockezang of Hackettstown, N. J.

Great Catches Made at Night

Lake Winola in Wyoming County provided excellent autumn fishing last year, according to Warden Myron Shoemaker of Laceyville. Fishing at night with fly-and-spinner and plug baits, Charles Snyder and Paul Crawford, Tunkhannock anglers, caught 46 small-mouth bass during late September and early October. The smallmouths were of just right size for providing the thrills that only fighting bronzebacks can give, ranging in weight from two to four and one-half pounds. Snyder, who fished flies, had slightly better luck than did his companion who fished plug.

Fishing flies for the first time last season, Dr. W. O. Smith of Tunkhannock had unusual luck. He landed two battling smallmouths, each weighing over four pounds. Taking bass like that on the tiny feathered lures, he told Shoemaker, has made him desert the bait fishing cause.

DISTRIBUTION REPORT, 1933

Following is a report of distribution of fish and frogs to waters in Pennsylvania, covering the period, January 1 to December 31, 1933.

Species	Size	Age	Number	Value If Purchased
Brook Trout	6" to 12"	17 to 30 months	677,825	\$133,997.30
Brook Trout Fry	2"	3 months	147,500	1,452.50
Brown Trout	6" to 12"	11 to 30 months	179,400	67,999.00
Catfish	2" to 10"	4 mo. to Adult	705,126	34,087.23
Yellow Perch	Fry to 10"	Fry to Adult	363,190,969	183,775.46
Cisco	Fry	Fry	27,040,000	5,408.00
Minnows	1" to 4"	5 mo. to Adult	880,125	14,239.78
White Fish	Fry	Fry	5,184,000	1,036.80
Pike Perch	Fry	Fry	40,070,200	13,548.70
Sunfish	1" to 4"	4 mo. to Adult	2,313,950	91,201.00
Blue Pike	Fry	Fry	99,179,000	19,835.80
Lake Trout	2"	4 months	80,000	3,200.00
Black Bass	1" to 7"	3 mo. to Adult	182,932	38,834.98
Frogs	1" to 4"	4 to 12 months	993,400	43,495.60
Pickereel	12" to 15"	Adult	8,784	658.50
TOTALS			540,833,211	\$652,770.35

BOARD OF FISH COMMISSIONERS

HARRISBURG, PA.

SUBSCRIPTION BLANK

Enclosed find fifty cents (\$.50) for one year's subscription to PENNSYLVANIA ANGLER.

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HERE ^A_N^D THERE IN ANGLERDOM



Ever Try This Bait?

Joseph G. Armstrong, son of Senator Armstrong of Allegheny County, demonstrated a brand new type of lure effectively while fishing Kephart's Dam, on the Black Moshannon, Centre County, last summer, according to Warden Dave Dahlgren of Philipsburg.

Using huckleberries for bait, he succeeded in landing eleven fine yellow perch and bluegill sunfish. Expert fishermen using other lures were unable to get a strike, according to the report.

Sucker fishermen from Shenandoah and Mahanoy City have been enjoying good sport on Lakewood and Lakeside ponds, according to Warden Anthony Leeh of Shenandoah. Joseph Derricott and John Heiser, both of Mahanoy City, each made a nice catch recently from these waters. All of the suckers ranged in length from 10 to 14 inches. Derricott had 14 and Heiser landed 10. Some exceptionally large shiners have also been taken from these waters.



JIMMY JAMES, CARLISLE,
WITH A 19-INCH BROWN
TROUT FROM LETORT
SPRINGS, CUMBERLAND
COUNTY

Tioga County's sucker fishermen look forward to good sucker fishing with the breakup in the ice on Marsh Creek and other warm water streams, according to Warden Horace Boyden of Wellsboro. They base their prediction on the fact that owing to the extreme cold and ice, suckers did not feed heavily during the winter months. Some yellow perch were being taken last month through holes in the ice.

Believe it or not, a 40 pound catfish was caught in Lake Henry, Wayne County, several years ago. The giant fish, and of course it was not a bullhead, had been stocked from Lake Erie. It was landed by Andrew Downing of Seranton, and measured 40 inches in length. How catfish grow in Pennsylvania!

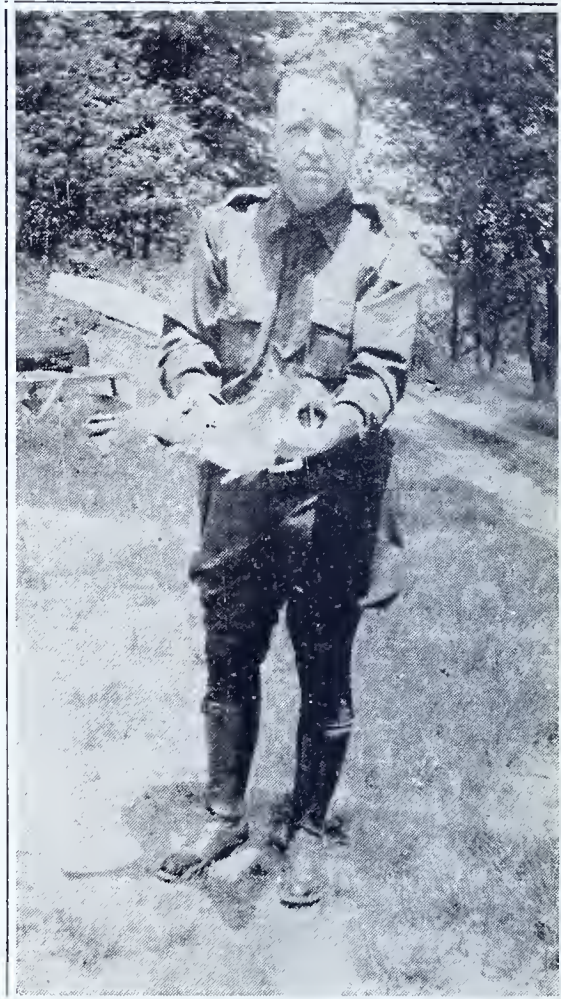
Ice gorges followed by low water seriously affected sucker fishing on the Upper Delaware, a great sucker stream, this spring, according to Warden Frank Brink of Milford. Better luck is anticipated after warm spring rains.

While fishing in Hayes Creek and the Lehigh River last trout season, four anglers from Mahanoy City caught 22 fine brown trout. Dr. J. Bonavich, George Miller, Ed Tarsa, and John Booth caught all their fish on dry flies. The coachman, cowdung, and gray hackles yielded most of the strikes. The two largest brownies were caught by Tarsa. Each was 16 inches long and weighed a pound and a half.

Raymond Staller of Schuylkill Haven caught one of the largest pickerel taken from Sweet Arrow Lake in Schuylkill County last season. It measured 25½ inches in length and weighed 3½ pounds.

Two suckers having a combined weight of 7¾ pounds were caught from the Yellow Breeches Creek in Cumberland County by Jacob Long of Carlisle last month, according to Warden George James of Carlisle. One of the big fish weighed 4 pounds, the other 3¾ pounds. Other excellent catches were also made on central Pennsylvania's great sucker streams. John Stringfellow, Carlisle, caught 16 suckers in a day's fishing from the Conodoguinet, Kenneth Fagan, Carlisle, 8 suckers, and Mae Pittinger, 12 and 10 suckers in two days' fishing. Sherman's Creek in Perry County has also been furnishing good sucker fishing. On March 13, C. B. Dunkleberger of Oak Grove caught 14 suckers from this stream.

When mosquitos are bothersome, a small bottle of oil of citronella comes in handy.



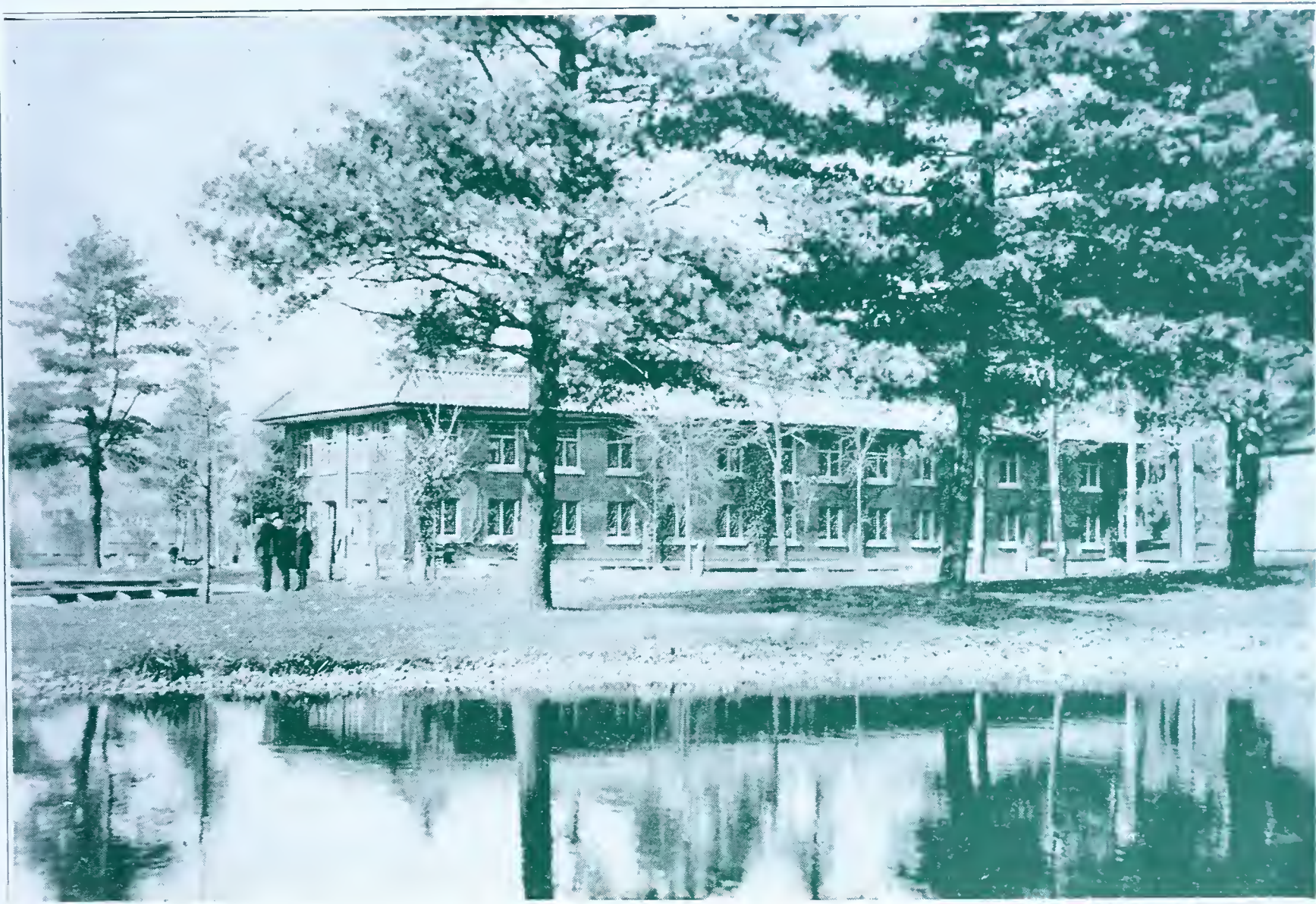
CORPORAL STUART, STATE
POLICE, WITH HIS 5-POUND,
6 OZ. BROWN TROUT FROM
THE SAWKILL, PIKE
COUNTY

Five pickerel, weighing 26 pounds, were caught by Jack Salak, of Waymart. The fish were taken from Lake Ladore, Wayne County, during the autumn.

Finds Bass on Floating Ice

Observing something that at a distance appeared to be a leaf on a cake of ice following the breakup of ice in Pine Creek during March, Warden Dewey Grant of Galeton investigated more closely. The "leaf" seemed to move slightly, and to his amazement, he found a ten-inch smallmouth bass. Stiff from the cold and apparently still in a somewhat dormant condition, the fish weakly slapped with its tail the strange craft on which it was floating downstream.

Grant returned it to the stream and it promptly disappeared.



MAIN HATCHERY BUILDING AT CORRY, ERIE COUNTY

Corry Hatchery is devoted entirely to raising brook and brown trout. Trout produced at this hatchery are beautifully marked, heavy in girth and worthy opponents for an angler's skill. A grove of virgin hardwood and evergreen trees encompasses the hatchery.

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When General Grant Fished in Pennsylvania —

"Of one of these streams in Elk County a good story is told. A number of years ago some gentlemen built a hut on the banks of the Toby and named it Mineral Shanty. Here they invited and brought General Grant for some hunting and fishing. After a few days' good sport, the nation's great General and President discovered he had been fishing out of season and had, therefore, illegally killed a number of fine trout. Indignantly he threw away his rod and straightway hied himself to the nearest justice of the peace, where he lodged complaint against himself for violating the fish laws. The justice, it is said, was disposed to be lenient towards the distinguished offender, but to his amazement, it is reported, General Grant delivered a short lecture to him for his weakness and insisted on being fined to the full amount and on paying it."

From Report of the State Commissioners of Fisheries in 1895

PENNSYLVANIA ANGLER



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NO. 5

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BOARD OF FISH COMMISSIONERS

MAY
1934

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ALEX P. SWEIGART, *Editor*
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NOTE

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PENNSYLVANIA ANGLER welcomes contributions and photos of catches from its readers. Proper credit will be given to contributors.

All contributions returned if accompanied by first class postage.

Want Good Fishing?
OBEY THE LAW



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BOARD OF FISH COMMISSIONERS

OLIVER M. DEIBLER
Commissioner of Fisheries

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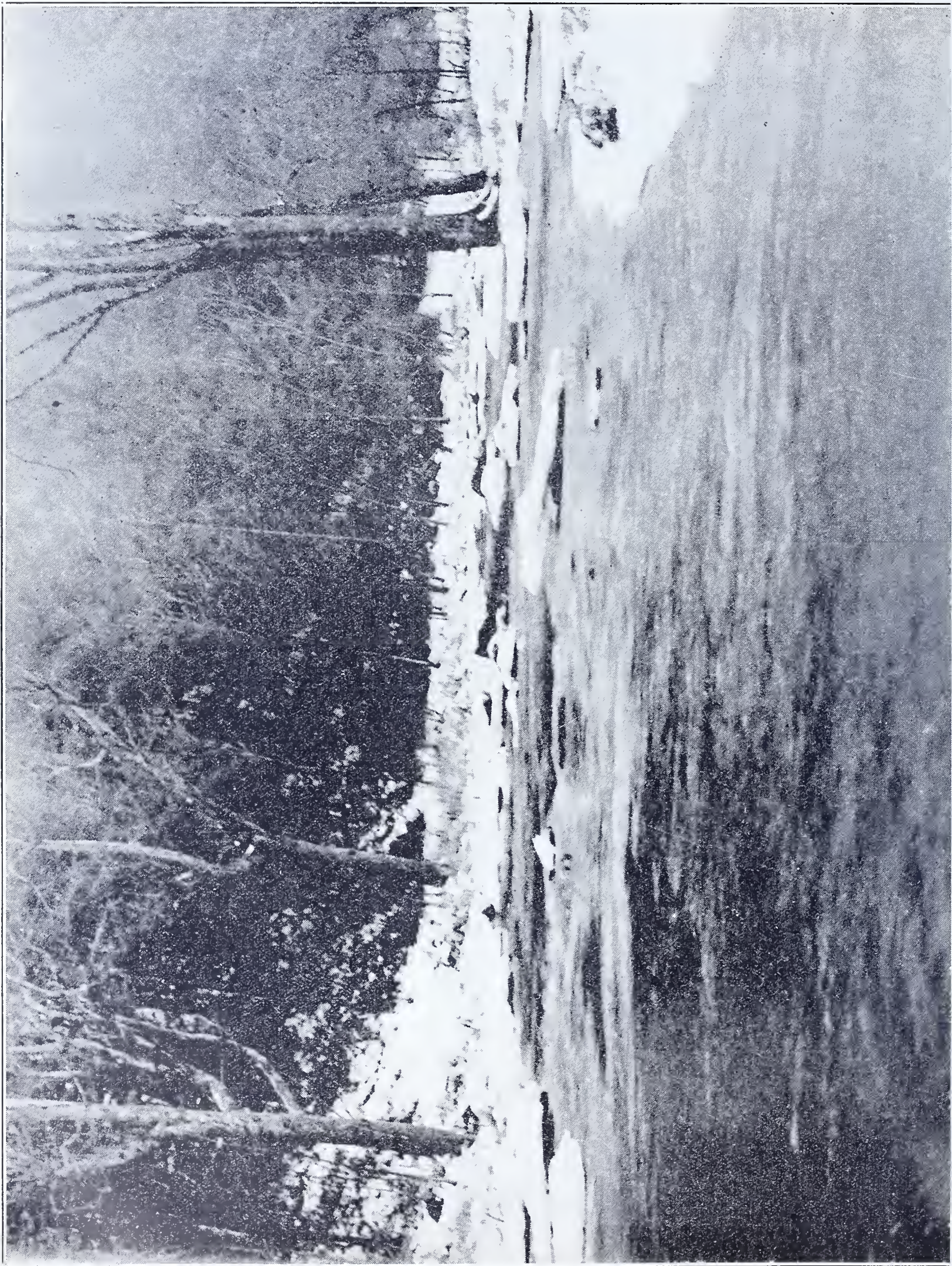
An Invitation

THE BOARD OF FISH COMMISSIONERS cordially invites you to attend the opening of the new stream improvement and trout farm project, located on Spring Creek, Centre County, near Bellefonte, on May 25. This development ranks as an outstanding step in Pennsylvania's fish and stream conservation program.

It is the hope of the Board that the Spring Creek stream improvement project will serve as a model for our fishermen in other sections of the Commonwealth who plan to increase the carrying capacity of trout waters in these localities.

Come to Spring Creek on May 25, enjoy the program that has been arranged for this gala occasion, and mix with the sportsmen from every section of Pennsylvania and outstanding conservationists and sportsmen of Eastern United States. See some of the nation's best fly and plug casters in action. You will be warmly welcomed.

No Extra Charges or Special License Required



A WINTER SCENE ON SPRING CREEK

PENNSYLVANIA ANGLER

MAY, 1934

VOL. 3

No. 5

EDITORIAL

Junk Has No Place in Trout Streams

POLLUTION of many of our most beautiful streams and waters is a deplorable fact. From every angle, it is inexcusable, as the refuse that litters riffles and still waters can be more easily disposed of on junk heaps and disposal plants designated for that purpose. For a moment, let us consider pollution of every type as a state-wide problem. At the present time, eighty-five per cent of the streams of Pennsylvania are subject to defilement in varying degrees. This means that the other fifteen per cent of our waters free from contamination must necessarily bear the brunt of fishing by nearly half a million fishermen. Facts must be faced if our anglers hope to keep these remaining streams at a production peak, or at a stage where they will furnish a maximum of good fishing and other recreation. Only through the education and cooperation of the general public, can this be accomplished.

We must literally "begin at home" in our drive against stream desecration. In our schools, civic clubs and social organizations, we must begin by teaching the value of pure water and the tremendous cost of treating polluted water. The day has passed when trout streams, warm water lakes, creeks, and rivers can be regarded as junkyards for worn-out commodities. This type of disfigurement of our waters may be averted only when the people of Pennsylvania unite in a determined effort to bring it to an end.

Let us take as an example one of our trout streams, heading in a mountain gap and flowing through woodland and meadowland to its point of juncture with some larger stream. Its source of water supply lies in deep-seated springs, many of them shaded by laurel and bubbling from the bases of rocky cliffs in the mountain country. Low temperature water, pure as nature intends it to be, it swirls into deep, rock-lined pools, cuts beneath overhanging banks of thick brush, tumbles over falls. There is in its swift noisy descent to the meadows something of the primitive beauty that was Pennsylvania's when the Red Man hunted along its course.



When it emerges from the woodland, however, a gradual change, a contrast, is to be observed. Here and there on the stream bed may be seen an old tin can. Farther downstream, more evidence of its use as a graveyard for undesirable commodities piles up. A wagon wheel may be resting on a rifle. Old automobile tires, broken dishes, and not infrequently the rusted, battered body of an ancient automobile may impede its course. Evidence is to be found at many spots along this beautiful stream of the careless dumping of useless articles and garbage. They mar its beauty, they stamp it as a resting place for the cast-off things of human life. This type of defilement is clearly without excuse, and aroused public opinion in Pennsylvania should dictate its end.

Hundreds of our trout fishermen each year seek waters many miles from the beaten path. A hard tramp through the brush, over steep ridges and mountains, holds nothing to daunt them. Why, you may ask, do they do this when well stocked streams may be more readily accessible? Primarily, of course, it is to find a stream where few others fish. And here again, is proof that there is still the instinct of our ancestors coursing through our veins—an instinct that caused the frontiersmen to push beyond the barrier of the Alleghenies. It is evident too that these fishermen want something that is easily within the reach of everyone—streams unmarked by human carelessness.

Our most accessible streams, trout and warm water, may be given the untrammelled touch of a mountain brook.

Public opinion should dictate the policy "Break Up Stream Defilement." This must be the first stride in the anti-pollution drive.

Here is a worthwhile cause for the people to champion, a cause in which they may take an active part. It may well be advocated by teachers in our public schools, by scoutmasters to their troops, by organized groups for social and business betterment, for instance, our chambers of commerce.

Our streams are recreational havens for thousands of the people of Pennsylvania. Obviously, it is to their interest that these waters be as nature intended them—free from the refuse that rightfully belongs on junkheaps or in disposal plants.

Let us then, each and every one of us, take unto ourselves the individual responsibility to battle and fight to the bitter end this defilement and desecration of the biggest thing in all creation. Poets and prophets of the Old Bible in song and story referred to water no less than a hundred times and told of its value to the lands and the peoples of that time. Water was used by Jesus of Nazareth as the physical emblem of baptism almost 2000 years ago but I am wondering whether He would venture to go down into the poisonous polluted streams of Pennsylvania to undergo a similar ceremony today.

M. Deibel

Commissioner of Fisheries.

Spring Creek Project Opens this Month

A MODEL trout farm and stream improvement project, the first of its kind in the United States, will be opened to the public by the Fish Commission on May 25. Already this novel development has attracted attention in conservation circles not only in Pennsylvania but in other states. Located on Spring Creek, Centre County, near Bellefonte, the Spring Creek project is near the geographic center of the Commonwealth. It marks a notable advance in fish conservation and is the major initial step in a state-wide campaign of stream improvement.

Outstanding figures in conservation in the United States are expected to be present for the opening day program. Included in the list of notables expected will be Hon. Gifford Pinchot, Governor of Pennsylvania, and Edward R. Hewitt, New York, famous authority on stream improvement. Governor Pinchot and Mr. Hewitt are both expert fly fishermen. Other experts in fly fishing, plug casting and fly tying including Art Neu, Newark, N. J., Charles Ward, President of the National Association of Scientific Angling Clubs, Pittsburgh, Andrew A. Trimble, vice-president of the Association, Cleveland, Ohio, W. B. Kerry, Pittsburgh, and Joseph M. Messinger, Morgantown, W. Va., have been invited to attend.

In the first unit of ponds that have been completed over 260,000 rapidly growing brook and brown trout are now being held. The Spring Creek trout farm is really an auxiliary to the present Bellefonte hatchery, and will greatly increase the carrying capacity of that plant. Forty-two permanent ponds are now virtually completed, and work is progressing rapidly in installing concrete bulkheads for these ponds. They are fed by a giant spring of water that emerges at the base of a ridge. This spring has a flow of 3000 gallons of water a minute and is of deep-seated limestone origin.

Of particular interest to hundreds of fish-

ermen who will probably visit the site on May 25, however, is the comprehensive stream improvement project. Approximately one mile of Spring Creek, an outstanding trout stream flowing through the Fish Commission's property, has been improved by installation of current deflectors, dams of the type advocated by Edward R. Hewitt, noted stream improvement authority, and winter holes for trout. It is anticipated that the development will serve as a model for sportsmen who contemplate independent stream improvement projects on their favorite trout streams.

The new administration building, now com-

pleted, is an attractive center for the various activities that will take place at the site on May 25. It is planned to have expert fly fishermen instruct anglers just how to cast the tiny feathered lures, and one section of the property has been reserved for women anglers.

Following are the rules, adopted at a recent meeting of the Board, that will govern fishing at the Spring Creek project.

1. Size—It is suggested that the fisherman carefully return or release to the water all fish under ten inches.

(In the section reserved for women anglers, it is suggested that they carefully return or release all fish under seven inches.)

2. Number—All anglers limited to two (2) fish per day, and five (5) trips during the season.

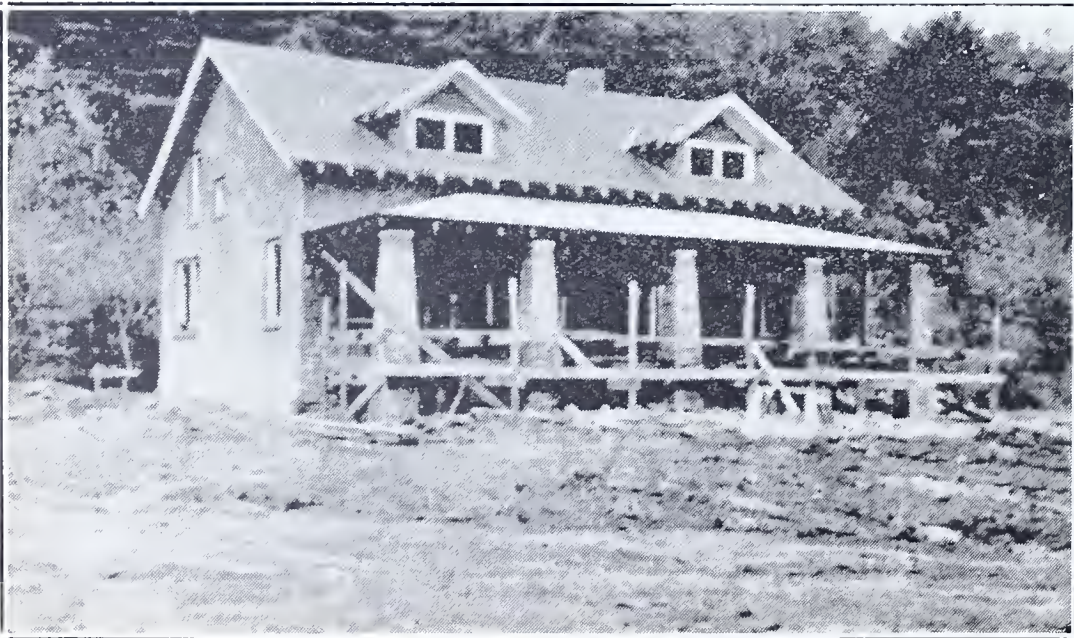
3. Fishing Devices—Artificial lures.

4. Hours for Fishing—Fishing will be permitted during daylight hours—Every person must be checked out by 9:00 P. M. Standard Time.

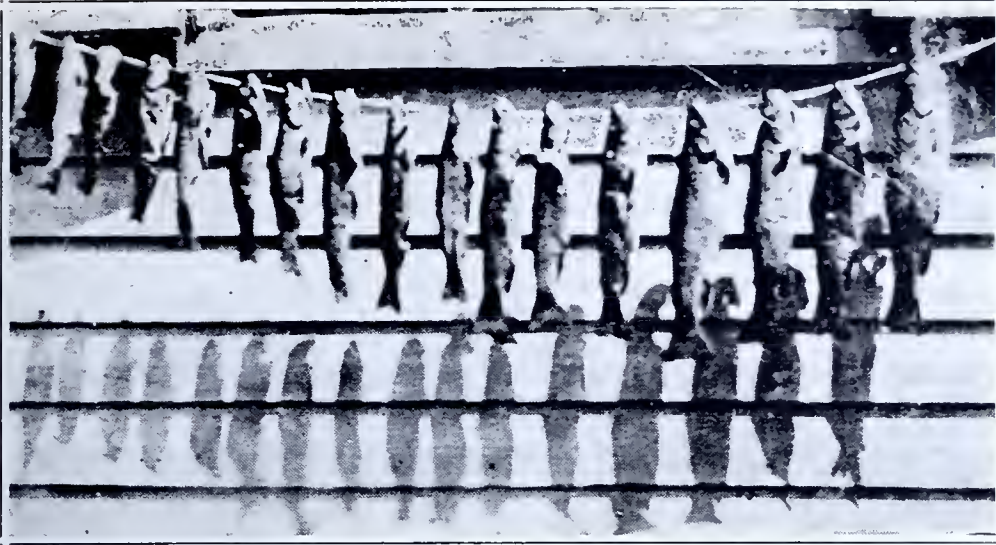
Upon entering the grounds, each fisherman will register and receive a button which must be worn while he is on the property. After he is through fishing for the day, in accordance with the rules and regulations, the angler will return to the place where his card was issued and check in with the man in charge. The card furnishes information such as name and address, license number, species of fish caught, their size, number and weight, and number of trips to the project. The Board wishes to emphasize the fact that no extra charges will be made and no license other than the regular fishing license will be required of fishermen who wish to fish at Spring Creek.



BOULDER DEFLECTORS, SPRING CREEK



NEW ADMINISTRATION BUILDING AT SPRING CREEK



A PARTY CATCH OF BROOK TROUT FROM PINE CREEK,
CENTRE COUNTY



Seth Says

I been a-fishin' fer speckled trout a right long time, and durned ef I ever seen sech a bunch o' fishermen on our run as there was this year on openin' day. Not thet I was taken aback so much, at that, fer weeks afore trout fishin' time, the boys was a-talkin' it up. An' what I'm so glad to see is the way they're figgerin' on doin' their part to better our streams hereabouts. Reckon us fishermen is gettin' the right slant on makin' the fishin' a heap sight better.

Well, sir, eomin' back to the first mornin', I starts stirrin' around afore daylight. The wife didn't take none too kindly to what she calls traipsin' about long afore milkin' time. -Sorter let on she figgered anybody was out o' the head to stand along a crik in a downpour o' rain, an' sed she hoped some folks was as willin' to do work around the place as they was to fish. Me, I jest pretended not to hear, an' out I starts.

When I gets to the run, it was jest a little milky, an' not too high. Other fellows was out, too, and by gorry, who do I run into but Jerry Tims right off. I hed one place in mind, a deep hole where the run cuts under the roots of a big hickory, and thet's where I heads fer, figgerin' if I ketch the big speckled trout I lost last year it'd be worth-while gettin' a good duckin'. Well, sir, I works in eareful to the hole, an' hadn't more'n throwed in, when bang a trout hits it. Right then I figgers thet it's the big feller. He tore around lively fer a while an' when I lifts him up on the bank I see right off the big feller ain't been fooled. A right nice speckled trout it was, at thet, though, all o' twelve inches, so I reckon, rain or no rain, I hed real sport fer the day ef no more fish was caught.

Mebbe the boys may figger I'm talkin' nonsense, but somehow even ef I ain't caught thet old timer, I feel right good about it. Fer, you see, he'll be there fer me to work on gettin' more'n one day this season.

Fish quickly desert areas where forest fires have raged because of lack of vegetation and insects.

Catfish are so called, it is claimed, not because they look like cats, but because they make a purring sound when taken out of the water.

A 44-inch eel that weighed nine pounds was caught this summer in Denny's Pond at Ararat, according to Warden Joseph Podboy of Forest City. Bert Porter of Ararat made the catch.



RAINBOW TROUT

PROGRESS REPORTED IN GOOD-WILL CAMPAIGN

Outstanding progress in the Good-Will Campaign of the Palmerton Rod and Gun Club has been reported by Ira J. Bleiler, secretary of the club. At the annual spring meeting, it was announced that a drive to promote better understanding and friendship between landowners and sportsmen in that vicinity had been attended with marked success.

In fostering a spirit of good-will, the club appointed committees to visit landowners and explain that one of the purposes of the club is to maintain good-will and understanding between farmers and sportsmen. All landowners along Big Creek from the Monroe county line to Harrity, along Wild Creek, from the Junction to above Meinhart's Bridge, and along the Aquashicola from the Monroe county line to Kunkle's Grove have been contacted and are reported to have expressed their willingness to keep their properties open to fishermen, in addition to having accepted honorary memberships in the Palmerton Rod and Gun Club.

Copper fish hooks used by fishermen on the River Euphrates thousands of years ago are in the possession of the Field Museum, and are said to be not very different from modern hooks.

THREE "DOUBLES" ON SUCKERS

Catching suckers from the Sinnemahoning Creek this year has been so general, according to Warden Robert Chrisman of Emporium, that it's not unusual from a news standpoint. But sucker fishing, like other forms of the angler's art in Pennsylvania, produces its highlights, and it remained for John Beek of Emporium to prove it.

In three successive casts on April 5, Beek caught six big suckers. Of course, he was using two hooks on his line when he scored the "doubles," and how those suckers responded to the lowly angleworms he dangled before 'em. Three days' fishing in the Sinnemahoning at Emporium yielded 60 suckers for Beek.

BOARD RESCINDS BURR HOOK RULING

At the meeting of the Board of Fish Commissioners last month, it was decided to rescind the ruling governing the use of burr hooks on plug bait. It was unanimously agreed that until the Board has had time to give sufficient publicity to the use of only one burr hook of three points on a plug bait, the ruling formerly adopted on February 1, 1926, which permits the use of more than one burr hook on a plug bait, be in force. The 1926 ruling follows:

"In view of the great number of fishermen using plug bait, the Board will consider a burr of three points as one hook, thereby permitting the use of the plug bait of three burrs of three points each."

At the meeting held February 9, 1933, a ruling was adopted prohibiting the use of more than one burr hook on plug bait. Inasmuch as the Federation of Sportsmen's Clubs, other Associations and individuals have protested against the ruling, stating insufficient time had been given fishermen to rearrange their fishing equipment, it was decided that the ruling should be rescinded at least for the present, and the whole matter be discussed at the next meeting of the Federation of Sportsmen's Clubs, which would probably be held during the late fall, or early in 1935, which would be before the convening of the next regular session of the Legislature.

The present law must be changed, clarifying the section on the number of hooks to be used.

CRAWFORD COUNTY SPORTSMEN ACTIVE

Organized three months ago, the Crawford County Branch of Division F, Pennsylvania Federation of Sportsmen's Clubs, now has a membership of 1050, according to E. A. Williams, Secretary. Monthly meetings are held at various branches throughout the county and enthusiastic attendance has marked the meetings.

Attendance at the State Game Exhibit in Meadville, March 15-17, sponsored by the Crawford County Branch, totaled 35,323 people. The annual Fish Dinner, held at the Oakland Beach Hotel on May 11, also aroused keen interest, and Crawford County sportsmen are backing the conservation movement in that section of the state in a most commendable manner.

Life of the Inland Waters

The Quest for Food

APPARENTLY, to glance over the surface of a pool in a central Pennsylvania stream, no life is stirring. A slight breeze of early morning, for dawn has just broken, crinkles the water, stirring the rushes in the tiny bay below the riffles. Certainly this stillness would indicate that a truce has been drawn in the constant struggle for existence, a struggle that dictates survival of the strongest and destruction of the weak in the environment of the fishes.

But that even surface indications may be deceiving is soon apparent. This is the hour, that short interval after daybreak on a midsummer day, when the bass and pickerel are starting their quest for food. Later in the day, when the sun's rays penetrate and warm the water, the bass will school together and seek a deep portion of the flat where a spring emerges from the stream bed. Now singly or in pairs they are moving shadows of destruction in the shallows near shore. During the next twenty-four hours many events will happen on this deep freshwater flat with amazing rapidity. Game fish, panfish and forage fish will seek an abundant supply of natural forage present in the stream. Their code of living is one of the most fascinating chapters in the story of the water world.

Foraging Game Fish

In the rush-fringed bay at the riffles' base, a school of silver shiners has congregated. Suddenly a shadowy shape moves swiftly into the cove. A fourteen-inch bass lunges at the shiners, scattering them. Caught by the bass, one is turned swiftly and swallowed headfirst. Another bass follows its companion into this choice feeding ground. In swift pursuit of a shiner that skips frantically over the surface as it attempts to escape, the bass wallows into the shallows along the shoreline until a spinous dorsal fin



and half of its body protrudes above the surface. Bass are also pursuing the harassed minnow droves in their sections of the rocky shallows, their killing instinct sharpened by an abundance of prey. This morning, in accordance with the feeding whims that make the smallmouth, in appetite, one of the most fickle fishes of the inland waters, minnows are sought as food. Two weeks later, when the moon rises over the stream, their food may be the stone catfish that deserts its lair under a rock as darkness falls. Again, these bronze killers may hover near the stream bed, seeking the helgramite, larva of the dragon fly.

They are not the only game fish in quest of food during this early morning hour. Lurking in the shadows of lily-pads and weedbeds bordering the shoreline are long, slender shapes—eastern chain pickerel. Centuries before smallmouth bass were introduced to the creek to compete with them for the live food supply, pickerel sought their

prey in its waters. These native game fish, built for speed and colored for concealment, with jaws slightly reminiscent of duck-bills, match the bass in voracity and probably surpass them. It may even be said that frequently they kill for the lust of killing alone.

Their method of hunting differs radically from that of the active bass. Motionless, they hover in the quiet lily-pad pockets and weed beds until an unsuspecting minnow or other forage fish comes within striking range. The big pickerel in the lily-pads, near the lower end of the flat, is following time-honored custom this morning as it stalks its prey. Its length of two feet has been acquired by consuming thousands of forage fishes, and it has not excluded from its menu small members of its own species or even young bass. In this respect, the bass and pickerel are similar, for a hungry smallmouth that chances to find young pickerel or baby bass will devour either readily.

Several large shiners approach the big pickerel's lair. A green flash in the water, and only two of the group dart away. To satisfy its appetite, five or six minnows or other small fish must die beneath the sharp, slashing teeth of the big pickerel before the morning feeding period ends. By preference, it is solitary in habit, a lone killer of the inland waters.

Later in the day, probably as dusk deepens over the water, the game fishes will again start foraging, but the quest for food in the great flat goes on for other species throughout most of the daylight hours.

The Panfish Feed

Near the riffles' base, just where it breaks into swirls and eddies, graceful, silver bodied fish, somewhat similar in appearance to the shiners, but much larger and heavier, are feeding later in the morning. A grasshopper, struggling spasmodically to gain the shore, is snatched from the surface by a swift rising fall-fish. The largest member of the minnow family, this fish takes food either



A SMALLMOUTH BASS PURSUES ITS PREY



GAME FISH FORAGE—SHINERS

from the surface or the current, and in habits has something in common with the brook trout of the swift mountain and meadow streams. An instant later a different form of prey is devoured greedily by the fall-fish. Near the riffles' head, a helgramite has been dislodged by the current and carried downstream to the waiting fish. In appearance, the helgramite is peculiar. Its body is many legged, with two prominent appendages on the tail. On the head section of the shell are two strong pincers, while another small shell over the back merges into the gray skin folds of its soft body. For many fishes of the inland waters it is coveted food. The helgramite rarely exceeds three inches in length, and passes the aquatic stage of its life beneath stones in shallows and riffles of the stream.

In a deeper section of the flat, a water-soaked log rests on the stream bed. There is movement near it, for it is the home of a number of rock bass, green and brassy colored fish with prominent black markings. Voracious feeders, they compete to a certain extent with the bass and pickerel for the food supply. A rock bass of seven-inch length is capable of swallowing a three-inch minnow, for its jaws are a prominent part of this broad girthed denizen of the stream. Rock bass do not venture far from a chosen spot in seeking prey, consisting of insects that may be washed into the stream, minnows, helgramites, crayfish and stone catfish. Unlike the black bass, their forage quest is not usually limited to a short period but will eaver even the midday hours when the sun is at its height.

Hovering near the surface of the water in the wide shallows at the lower end of the flat are a school of beautiful fish. They are near the shoreline for a considerable portion of their food consists of insects that fall into the stream from the banks. On occasion, they will not hesitate to feed on small minnows; grubs, earthworms, crickets and grasshoppers are delicacies to them. These bluegill sunfish are aristocrats of the panfish group. Their coloration is a blending of deep olive green on the back, merging into paler green on the sides. Their cheeks are bluish, and at the upper bases of the gills are two prominent black "ears" or flaps. Several of the largest fish in the school have coppery red bellies. Alert and aggressive, they, like the rock bass, will strike at almost any time during the day. Heavy in girth, a six-inch bluegill is nearly as broad as the hand. Within range of their vision, a beetle

struggles toward shore, and there is a concerted rush for this tidbit. Of the fishes on the flat, the bluegills arouse a certain feeling of affection on the part of an observer. There is something about the manner in which they school together that denotes friendly rivalry in the quest for food. By preference their range is near the weed bed in this section of the flat. Ten o'clock in the morning still finds them actively foraging and they seem to welcome the sun's rays even on a hot summer day.

The Forage Fishes

Predominant in the minnow life of this particular central Pennsylvania stream are the silver shiners. Not often attaining a length of more than four inches, these graceful forage fishes are numerous in several of the shallow sections of the flat. Following the feeding period of the bass and pickerel, when they were scattered in many parts of the shallows, the schools have again congregated. Moving gracefully about near shore they seek vegetable matter, small water insects, or bits of animal life that may fall into the stream, and prey readily on hatches of insects that may appear on the surface. Their quest for forage is almost constant during the daylight hours. Other species of minnows, the common darters, are also present beneath rocks on the stream bed, but they are not so active as the shiners.

When darkness falls, another important forage fish, found frequently in warm waters of the limestone belt, emerges from its home beneath shelving rocks and banks. It is the stone catfish, often known as the stone roller and stone cat by fishermen. In large part, its forage is similar to that of its cousin the bullhead, consisting of small organisms or animal matter that may be washed into or exist in the stream. After a rain storm, when the water is heavy with silt and mud, the stone catfish is constantly on the alert for food. It rarely attains a length of more than six inches, has a broad, flat head, a body that tapers sharply to the tail, and is yellowish brown in color. The tail is tipped with black. Both bass and pickerel seek it as food.

The Bottom Feeders

During the day, suckers have been wandering through the clear water of the flat. Moving slowly back and forth near the stream bed, a school of these roundbodied fish, fifteen in number, have been actively in quest of food. Now and then one of them noses its way into some small crevice, seeking with



THE SUNFISH, A SHORE-FEEDER

its rounded lips, that may be extended or drawn back at will, tiny organisms teeming in its range. The procedure, to an observer, might seem an aimless affair, but suckers are an unhurried lot, and their food quest requires time. Occasionally, some small worm that has drifted into the flat attracts the attention of the fish, and is taken by one of the sucker school.

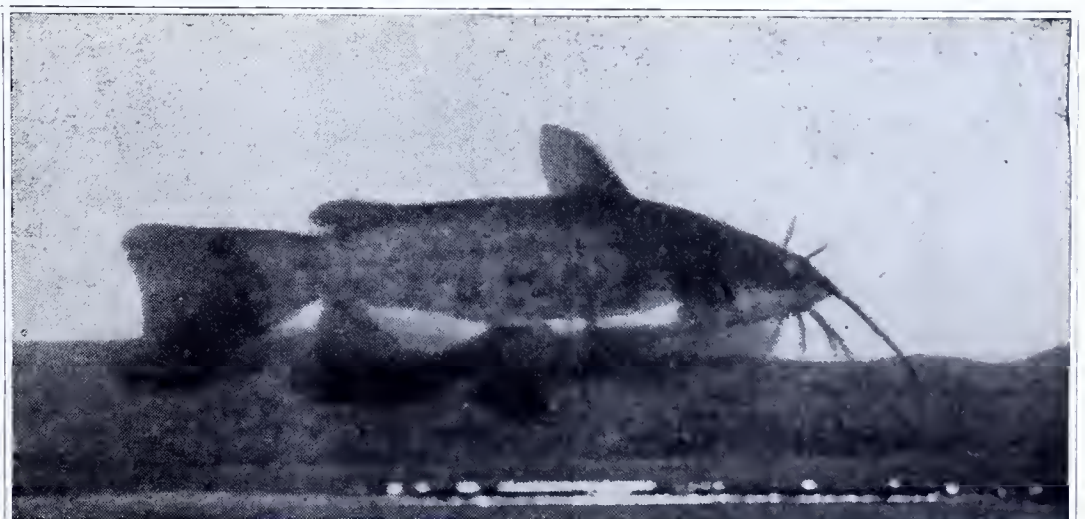
Other bottom-feeders are foraging. Four mullets, the largest approaching 18 inches in length, probe about in the shallows. Of the inland water fishes, the mullet perhaps can lay smallest claim to grace or beauty. Its head, somewhat broad and square in effect, is the bulkiest portion of its body. Primarily, the food it seeks is similar to that taken by the sucker, and its sucker mouth is directly under the snout. Tapering from the head rather sharply is the rounded body, brassy in coloration and strikingly mottled with black.

The Night-Feeders

When darkness settles over the flat, a long, slender shape undulates from its hiding place under a great rock. It is the scavenger of the inland waters, a great eel measuring over three feet in length. In its writhing movement close to the bed of the stream, there is something suggestive of weird creatures of a bygone age. There is a certain grace about this eel as it starts on a quest for food.

For several days, a dead muskrat has been lying near shore, a portion of its body exposed to the hot rays of the sun. Decomposition has been rapid, and to the eel this carrion offers an opportunity to banquet. Perhaps some strange instinct is guiding it,

(Please turn to next page)



A NIGHT-FEEDER, THE BULLHEAD CATFISH

for from other sections of the stream eels are also moving to the feast. Their pilgrimages to this particular spot may continue for several nights until the muskrat has been consumed.

During the night, the bullhead catfish are active. With the coming of darkness to the flat, these ungainly fish leave crevices beneath rocks or the mud of the weed-beds to seek their food. A dead minnow will attract them readily, as will worms, grubs, crayfish, or other life that is to be found on or near the bed of the stream. Blundering chaps, their progress in the search for food is tedious but effective. The barbels or "whiskers" at the end of the snout delicately probe about as they range, for apparently their eyes are not so keen as those of other fishes that inhabit the inland waters.

And so the food quest goes on in this central Pennsylvania fishing stream. In the darkness, all species to some extent will continue to feed. It is an inexorable law of the water world that almost without cessation some form of life must be taken to perpetuate life. The ceaseless struggle for existence during spring, summer and autumn months is a vital part of nature's great scheme, and where natural balance has not been too seriously disturbed, it is a strange and fascinating drama.

NO SPORTSMANSHIP HERE

F. J. Wheelock, Eatonville merchant, has a small pond near his store in which he had retained a number of brook trout for several years. By careful feeding, his trout grew until a number had attained a length of from 12 to 14 inches, and were very tame.

A short time ago, all but two of the speckled beauties died. Looking for a cause, he found that some boys had been feeding them cigarette stubs, and it is his belief that the nicotine from these cigarettes, held by the fish in their mouths only temporarily, had caused the death of the trout.

BOY, 8, LANDS 4-POUND BASS

Kenneth Campbell, eight years old, is a lad who knows quite a bit about the upper Delaware on which he lives.

One day last summer, according to Warden Frank Brink of Milford, Ken insisted that his mother accompany him on a fishing excursion in the Delaware, which is virtually in their "back yard." Finally persuaded, Mrs. Campbell rowed to the middle of the stream and anchored the boat.

Ken proceeded to get his tackle in order. For a rod he had a piece of a cigar box; his line consisted of a penny affair to which was fastened another section of old line. His lure was a helgramite, or "clipper" as it's called in northeastern Pennsylvania.

Then the big bass struck and firmly hooked itself. After that it was a real tug-of-war, with Ken finally the victor.

With the bass in the boat, the youthful fisherman insisted that the hook remain in its mouth until the craft touched land. He wasn't taking any chances.

THIS FISH STORY WON THE PRIZE

Believe it or not, says George Zimmerman of Allentown, secretary of the Lehigh County Fish and Game Association, there's one fisherman who doesn't want the big fellows to strike his lures. And to back his contention, George sends us the following "prize" fish story.

"Ed Ollinger won the prize last night for the best 'tall story.' He swore this one is true because he saw it with his 'own eyes.' He was fishing, he says, in Peck's Pond and near him was a fellow from the coal regions fishing for sunnies. All of a sudden he got a terrific strike and after much effort he pulled in a 28-inch pickerel. Most any angler would have been proud of such a fine catch, but not this fisherman. Surveying the monster pickerel for a moment he yelled to a friend in a nearby boat, 'The devil with the big ones; I'm fishing for little ones,' and threw the big pickerel back into the water."

SUGGESTS CURE FOR IVY POISONING

Troubled with ivy poisoning? Here's a remedy suggested by H. H. Smith, ardent sportsman of Clarks Summit. Mr. Smith's letter follows:

"A relative of mine had a terrible dose of poison ivy last year, so bad that it kept him from work a couple of weeks. He tried various remedies, without any appreciable result.

"A month or so later he got into it again, on his other arm, and at the same time he was carrying a bottle of argyrol in his pocket for his eyes.

"He is a railroad engineer, and he told me that the itching of the poison nearly drove him insane while on his engine, until in desperation he thought he would put some of the argyrol on it and see what would happen. To his surprise the itching stopped immediately. Several times during the day when it itched, he applied more argyrol, and when he left his engine that night it was entirely dried up.

"I don't know if it would work like this on every case, because I have often seen some remedy work in one case and be useless in another one, but it worked faster than anything I ever saw used."



ED. SHEESLEY, HARRISBURG,
WITH TWO FINE SUCKERS

FISHING YESTERDAYS

RECALLS EARLY FISHING TRIP ON JUNIATA RIVER

The Juniata River, one of Pennsylvania's outstanding bass streams, is the setting for this fishing experience of years ago as related by Ed. R. Stewart of Edgewood Park.

"The Juniata River afforded great sport for fishermen," he writes, "bass in particular being very plentiful. In one instance, I recall, a half grown boy, Craig by name, overhearing a fishing trip planned, asked permission to go along and it was granted. He was on hand bright and early the next morning and after reaching the river the two 'expert' fly fishermen stopped to rig up their tackle. The boy had provided himself with a long heavy cane rod. He was deeply interested in the artificial flies and asked if he could have 'one of them there flies.' One was produced from the tackle book, not representing anything in particular, just a bunch of feathers tied on a hook. He adjusted it to the end of his line (about the thickness of a chalk line) and started to 'fly fish.' When making a cast the swish of his rod resembled an airplane motor, but swish or no swish before the day was over he had taken five more bass than the 'experts,' some of them going three pounds strong."

THE BROOK TROUT "BELONGS TO US"

Trout fishing back in the gay nineties was attracting enthusiastic support from the followers of Izaak Walton. In an era when fry and not fish of legal size were being distributed to streams that drained well-timbered water-sheds, brook trout were hailed in Pennsylvania as peer of all game fishes of our inland waters. In its report for 1895, the Board of State Commissioners of Fisheries offers the following comments.

"As recently determined the beautiful brook trout of our waters is not a true salmon but a charr, a circumstance which need not cause the angler or the lover of this attractive fish any sorrow, since all the members of this group of salmonoids are noted not only for their beauty and grace but their game qualities.

"But there is still another reason why we of the East should take a particular pride in the speckled charr or trout. It belongs to us. It is indigenous to our waters as its natural habitat is east of the Allegheny mountains and the great lakes, with a longitudinal range from the upper rivers of Georgia to Labrador. Thus, we can feel that while we have received from other sections many noble fish, we have fully repaid by giving in return a gloriously lovely and great game fish of equal and often greater value.

"In a recent monograph, Professor David S. Jordan, an eminent ichthyologist, gives an interesting account of the origin of the true trout and its journey to the Pacific Coast from Europe, and its subsequent development into the many forms which now exist west of the great plains. This monograph and many indications suggest an equally interesting as well as somewhat similar story of the life history of the charrs which is here advanced, though not stated as a fact.

FLY-CASTING HINTS

EDITOR'S NOTE: In answer to numerous requests from recent subscribers to the ANGLER, the following information on casting a fly, which appeared in the March issue, is reprinted.

1. Normal Fishing Position. Rod about 15° to 20° above horizontal. Line and fly extended on the water.

2. The Lift. Rod raised to 60° to overcome inertia of line and lift it from the water. The lift should be made by an upward rather than a backward motion to insure a high back cast.

3. The Backcast. The lift and the backcast are merged into one smoothly accelerating motion. The power stroke should be stopped at or slightly before the perpendicular, from which point the rod naturally follows back to the position in Figure 4. Note the position of the line unrolling above and back of the rod top in Figure 3.

4. Position at the End of the Pause. Rod should be stopped at about 20° behind the perpendicular. Note that the line has almost but not quite unrolled and straightened out its loop above and behind. While the common fault is to start the forward cast too soon, if you wait until the line is entirely unrolled, it will immediately begin to fall and will have lost its "live" feel so necessary to a good forward cast.

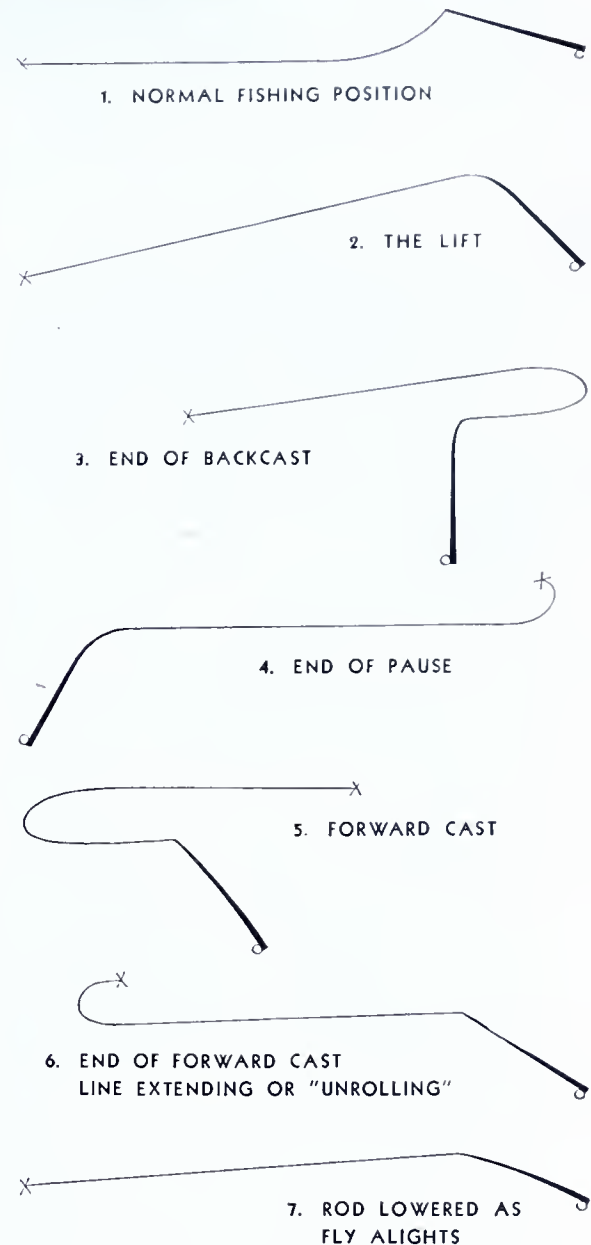
5. The Forward Cast. Note the forward traveling loop of the line.

6. End of the Forward Cast. The loop is nearly unrolled.

7. Rod Lowered as Cast Is Completed, and line, leader, and fly drop lightly on the waters.

unless some better place chances to offer, they return to the same spot. This well known characteristic affords the basis of many an angler's story of the cunning of some aged speckled monster that for years defied persistent efforts for its capture, even when the most captivating lures were offered until the fortunate narrator came along. While the brook trout sometimes reaches the weight of three or four pounds in Pennsylvania waters the average size taken are from seven to nine inches, although from ten to fifteen inches are not rare. But the last named size is seldom exceeded; anything over usually excites general attention and the story of the catch will wander some distance beyond the vicinity in which it was made."

Consider the other fellow when trout fishing. If he already is trying a pool, give him a chance to fish it and detour around him. Later, you can come back and perhaps fish it to your liking.



A SAD STORY

One of the Fish Commission's trucks from the Corry Hatchery had stopped at a gas station in Potter County some time ago, and the driver, according to A. G. Buller, superintendent at Corry, found a complaint about the trout fishing forthcoming from an elderly lady who was an ardent disciple of Izaak Walton.

The Fish Commission, she told the driver, should do more stocking as the trout fishing was getting poorer each year. After going to considerable detail to explain that the number of legal-size trout distributed was being constantly increased, the driver was appraised of the following interesting facts:

In 1932, the lady who made the complaint said, she caught the "limit" of trout on five different occasions, and during the season landed over 500 trout. In 1933, however, she only succeeded in taking the "limit" three times and her season catch "dropped to a little over 400 trout."

"Like the true trout, the charr doubtless had as its parent the salmon, but born as was its relative with pronounced characteristics of its own. Whether correctly or erroneously, the writer suggests that its birthplace was in the British Isles, where several forms are found today, particularly in Wales, the north of England and Scotland. In course of time some venturesome specimens in taking an ocean journey found themselves in Greenland's fresh water streams, when the climatic conditions were far different from those which exist today. Changes in environment brought a change of form and the species known to ichthyologists as *Salvelinus stagnalis*.

"From Greenland, some of the new species, perhaps, made the short journey to Arctic America, and spread north and south, and as through glacial, or seismic action these groups became isolated, they took new and distinct characteristics, the most northern becoming *Salvelinus Narsei*, and *arctica*, and the moderately southern sub-polar species *Salvelinus Rossi*, and still lower *S. Nitidis*. Traveling still further south into Labrador these adventuresome charrs changed their form again and became our special favorite, *Salvelinus Fontinalis*, or speckled trout. Even when reaching the temperate clime, they made other specific habits in some suitable locations. In the Rangely lakes, Maine, they transformed themselves into *Salvelinus*, or blue-black charr, and in the great lakes and some other deep water ponds of northern America into *Salvelinus namaycush*, or lake trout. Other forms, generally rare, also exist. It is noteworthy, whether this be a true account of the wanderings of the charr or not, that there are but two of the species claimed to be indigenous in Pacific coast waters, namely the lake trout and the Dolly Varden trout, the latter of which received its peculiar but not inappropriate title from the landlady of a Sacramento hotel on account of the fancied resemblance to the gaily spotted type of dress named in honor of one of Charles Dickens' characters.

"But wherever the charrs have their home, the water must be pure, and the speckled trout is no exception to the rule. It prefers a temperature of from 50 degrees to 55 degrees, but will live and do well if other conditions are favorable at 68 degrees or even 70 degrees, especially if the water is largely foam tossed and otherwise very rapid running and broken.

"Given suitable water and plenty of food, the brook trout does not appear to care much whether a stream be mostly sun kissed, or embraced wholly by dark shadows, provided there are plenty of lurking places from which to watch for the coming of its food. This fish loves the fringes and tails of eddies; the shelter of rocks or stones in broiling rapids and at the base of falls; the shadow of half-submerged logs or overhanging banks and bushes. Only in deep, placid and dark pools do they wander at all. In the other localities the largest and strongest fish takes the best lair, the next occupies second place, and so on, and in these chosen locations they remain nose up-stream waiting for their prey, seldom going more than a few feet, except in spawning time, when frightened, or in pursuit of something edible that comes under their marvelous vision. In all these cases, however, as long as they live,

BALANCED STOCKING VITAL TO PENNSYLVANIA FISHING

By C. R. Buller

Deputy Commissioner of Fisheries

INASMUCH as the revenue for the various activities of the Board of Fish Commissioners is derived from the sale of fishing licenses purchased by all classes of fishermen, including those who enjoy fishing for the sucker, yellow perch, sunfish and catfish, it is the intent of the Board in its propagation and stocking program to give due consideration to this large class of anglers, which includes a great portion of the youthful fishermen.

In Pennsylvania there are many small natural lakes and ponds ranging in area from twenty to two hundred acres which provide fishing for a large number of this class of sportsmen. If the Board wishes to perpetuate this recreation for this class, it must adhere to a rigid policy of stocking with suitable fish. It must be borne in mind that while millions of fish are distributed in the lakes and ponds yearly, the product of natural reproduction far outweighs that of the hatcheries, and we look chiefly upon the planting of fish in these waters as an important supplement to the natural increase. It is, therefore, important that the Board does all that is possible to safeguard natural reproduction in these waters. The Board has recently made several advanced steps toward this end. First, by making a careful study of the life native to these waters and of the relationship of the different forms of life to one another. Second, by making a careful study of the life of the ponds and lakes that have been stocked with species foreign to the waters; as, the pike perch, bass and others and of their effect upon the natural cycle of existence. Third, by adopting a rigid policy of distribution, guarding against the danger of stocking with foreign species.

Few people realize the importance of maintaining the natural balance insofar as the fish life is concerned in a body of water, and after studying this factor over a period of years, the Board is of the opinion that the indiscriminate planting of unsuitable species of fish in our lakes and ponds has done more damage to fish life than all other detrimental factors combined; and a serious angle to the problem is the fact that there are no corrective measures to be taken after these plantings, which place indefinite checks upon the holding capacity of the pond for all species of fish, have been made.

Because of the serious disturbance to the all-important natural balance, it was ruled that the planting of bass should be limited to the rivers and large streams which already contain them. The Board feels that this works no hardships on the bass fishermen, as good bass streams are favorably located throughout the state. One or more streams can be reached within a few hours from any section of the Commonwealth. In



A POND IN NORTHEASTERN PENNSYLVANIA

certain sections of the state, strong sentiment has been expressed among the sportsmen in favor of stocking ponds and lakes with either one or both species of black bass, and the Board has been asked to rescind its ruling to restrict the planting of bass to the streams and rivers. This rule was made solely to protect the natural balance of existence in the interest of a great majority of sportsmen.

Anyone at all familiar with aquatic life realizes that many forms of life that compose the colony in any pond or lake are all more or less interdependent upon one another. This interdependence is commonly called the natural balance or balances of nature. Before the interference of man, this balance was very nicely adjusted, tending towards a plentitude of fish life native to the body of water.

The following short discussion will show how the balance of nature, insofar as fish life is concerned, is maintained in a pond that has not been stocked with fish foreign to that habitat.

The rate of reproduction of all species of fish is high, provided that the physical environment is suitable, but the fecundity of any given species in its native habitat is in direct proportion to the toll nature intended to be taken upon it for the good of the whole. Before the interference of man, the majority of lakes in Pennsylvania contained pickerel, yellow perch, sunfish, catfish, and minnows (shiners). In the yearly spawning of this group, the pickerel spawn first. They deposit their eggs about the time the

ice is leaving the body of water. The pickerel is the least fecund of the group, because nature did not intend that this species should be preyed upon to any great extent, as it is the first to be produced and matured.

The yellow perch spawn later and the offspring are consumed in large quantities by the small pickerel. Nature has provided for this by making the perch very fecund, so that the loss of some of them as food for the pickerel will not upset the balance. At the period in which the perch require fish for food, the minnow has reproduced and becomes a food supply for the perch. The minnow is regarded entirely as forage for other fish in nature's plan, and in order to meet the drain upon this species during its entire life cycle, it must necessarily be very productive.

As the season advances, the baby yellow perch become colored for protection and are not so easily captured as heretofore, with the result that the pickerel also begin to consume large numbers of minnows; thus a sufficient number of perch can survive to perpetuate the race.

The sunfish and catfish utilize a source of food supply that would go to waste if they were not present and they provide an abundance of food in themselves for the larger pickerel and perch. Thus one life after another is being taken, but the range of fecundity in this combination of fish life provides for the losses, and if other conditions are favorable a sufficient number of

all the species can survive to furnish a plentitude of fish.

Without attempting to enter into a too scientific explanation, let us now consider the more complex balance of nature governing the production of minute life consumed by the baby fish before they have attained a size capable of feeding upon higher forms. This minute life is composed of many forms of varying sizes, from those microscopic to those about one-sixteenth of an inch in diameter. This group is commonly referred to as plankton. A larger form of plankton is commonly called water fleas. They are present in a more or less degree in all natural pond and lake waters and comprise the first food taken through the mouth by all baby pond and lake fish.

The number of these organisms present in a given body of water during a season is dependent upon the rate of growth and decay of the vegetable or organic matter in and about the water. The rate of growth and decay is greatly influenced by temperature. The higher the temperature, the more rapid the growth and decay, resulting in a denser crop of plankton. Not all of the forms comprising this complex group of plankton are eaten by the fish, but the lower forms are of vast importance as they assist in organizing organic and inorganic substances into fish food forms. It must be remembered that baby fish cannot survive without these organisms, as they are the first food taken through the mouth and their production increases with the increase of water temperature. When the pickerel hatch in early spring, the water temperature is low, and the organisms of this group are comparatively scarce, but few are required as the pickerel are not very fecund and not a heavy toll is taken upon the organisms at that time by the baby pickerel. When the greatly increased number of baby yellow perch make their appearance the water temperatures have reached approximately 60 degrees, resulting in a great increase in these

fish food organisms. When the vast number of baby minnows come forth and the sunfish and catfish have developed to a stage requiring this food, the water has reached its maximum summer temperature, and the plankton has increased sufficiently to withstand the tremendous drain put upon it.

When other species of fish are planted, this nicely adjusted balance is distributed, always with the result that the capacity of the body of water to hold animal life is lessened, because two or more kinds of fish have been placed in direct competition for the same source of food supply. The fish life in the average lake or pond in Pennsylvania cannot stand such competition and afford good fishing.

The Board is familiar with the fishing conditions in practically all the lakes and ponds throughout the state, and few complaints as to the number of fish caught are registered from areas containing the native combination of fish, although many complaints are forthcoming about areas containing bass and other voracious foreign species. The complaints are generally accompanied with requests to stock with additional bass when, in most instances, the number of bass in the lake is in excess of the food supply.

Records over a period of years show that few lakes under two hundred acres are capable of producing over two hundred legal sized bass a year and that the capacity for holding other species is proportionately decreased, with the result that a great mass of anglers is seeking waters where worthwhile number of native species can be taken. It is not uncommon to find beautiful natural lakes that once provided good fishing now containing such combinations as pickerel, black bass (both species), calico bass, rock bass, pike perch, yellow perch, sunfish, catfish and minnows. In a combination of this kind, there is at least six species in direct competition for the same source of adult food supply, to say nothing of the food competition among the smaller fish. Yet in

many instances, the sportsmen who were interested in stocking the lake with these varieties are now complaining about the few fish caught. The sole effort of the Board of Fish Commissioners is to promote good fishing for all classes, and they respectfully ask the cooperation of the sportsmen in carrying out their present stocking policy with respect to bass and other voracious species in order that worth-while fishing can be provided for future generations.

EARLY SEASON WATER-SNAKE

It takes a brave watersnake to face the chill winds of March, but at least one of the reptiles that emerged so early from hibernation did so to its sorrow. On March 20, Warden Frank Sanda of Steelton was patrolling Big Chickies Creek in Lancaster County. To his amazement, Sanda found a 30-inch watersnake sunning itself on the shore of the stream. Considering the chill weather, the snake was fairly active, but Frank succeeded in killing it. Then, just to make sure that the incident would not go down in the records as one open to question, he brought his kill to the office of the Fish Commission to back the report.

TROUTING GOOD IN TIOGA STREAMS

Splendid first day catches of trout from the famous North Tier waters in Tioga County have been reported to the ANGLER by Warden Horace Boyden, of Wellsboro. High water in the larger streams, particularly Pine Creek, caused many anglers to try their luck on the smaller waters and in general, good creels were taken. Cedar Run, an ace stream, of the North Tier was extremely high, and Boyden said he found only five fishermen while patrolling it.

"Fishermen in the branches had very good luck," he writes, "and reports are coming in of some fine catches. Present prospects indicate a banner trout season. Barring heavy rainfall, of course, our best fishing in Tioga waters should start about May 1. The golden spinner fly took a nice catch of trout from the headwaters of Kettle Creek on the first day, and my son who made the catch was enthusiastic about the way the trout were rising. Ed Thornton of Wellsboro caught fifteen nice trout before eight o'clock on the morning of opening day."

FORMERLY POLLUTED STREAM CLEARING

From Warden Lewis Proudfoot of Elverson, Chester County, comes information of interest to Pennsylvania fishermen. A stream near Parkersburg, Chester County, he writes, that for a period of thirty years did not have a fish taken from its waters, owing to pollution, furnished some nice catches of bass last summer.

The younger generation scored on this stream. Joe Mann, Jr., caught a bass measuring 14 inches in length, while Betty Proudfoot of Elverson landed two bass, one 12 inches, the other 12½ inches in length.



SPAWNING YELLOW PERCH

DAYS ASTREAM

A Section Contributed by Readers of PENNSYLVANIA ANGLER

SNAKE BITE

by

NICHOLAS R. CASILLO, New Castle

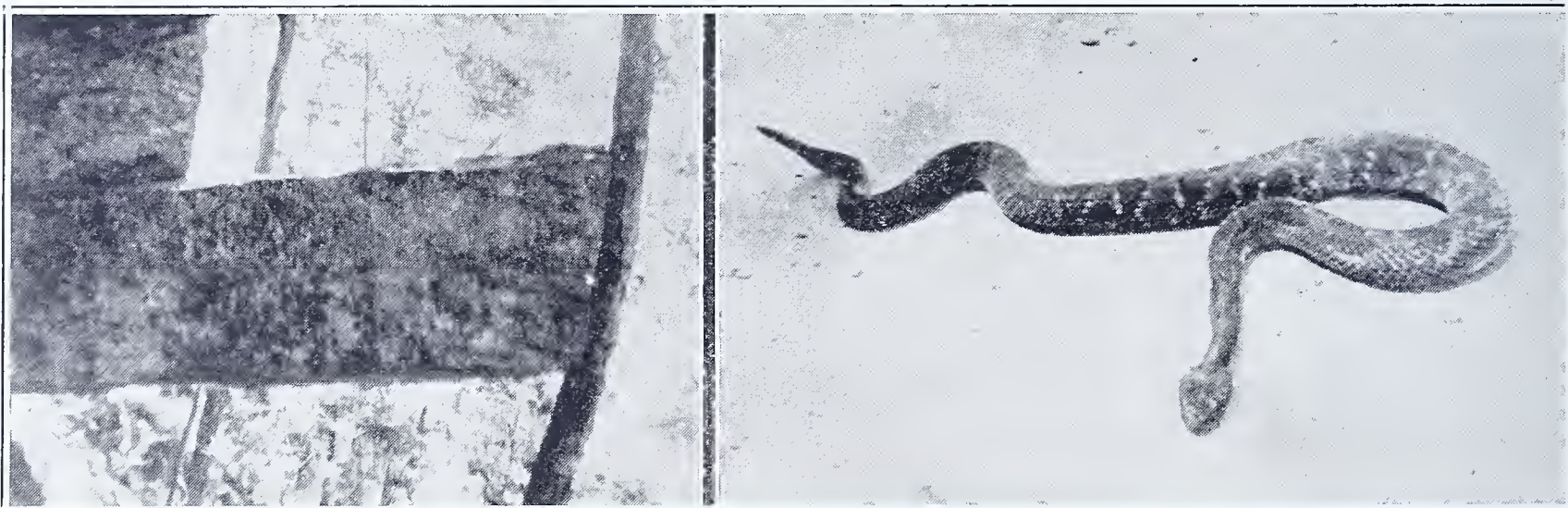
On the road immediately in front of camp we encountered three timber rattlers. The first one sunning himself in the dust of the roadway was dispatched with a stout stick and then beheaded. While the headless body was still writhing I seized the tail to sever the wildly vibrating rattle and received a rude shock. No sooner had I touched the body when the trunk minus the head swung back like a flash of light and struck. I drew back in amazement. Physically the snake was dead, but so deeply ingrained is the instinct of striking that it caused every nerve in the decapitated body to respond to the stimulus of touch and cause it to strike.

slightest provocation. A picture, of course, that is far from being accurate. Indeed, the timber rattler will go to some extremes to avoid intrusion, generally selecting out-of-the-way places for its den and basking places. In the ledges are deep recesses that extend far below frost line and are used by the snakes during the period of hibernation. Copperheads, rattlers and some non-venomous snakes, such as the big pilot snake live harmoniously together in these winter quarters. Late in the summer the females repair to the dens to give birth to their young. With the coming of cold weather all rattlesnakes within a mile or two of the den penetrate the deep fissures to begin their long period of inactivity, lasting until late April or early May.

The average length of this snake is under

Wooded, rocky hills, adjacent to damp meadows are favored by the copperhead, where it conducts its search for birds, frogs and other small prey. Because of its habitat it is also commonly known as the highland moccasin.

The massasauga, a diminutive rattlesnake (two to three feet long), is found on dry, hummocky ground in swamps. It is not abundant in its distribution, being found in scattered places throughout its range, which is the same as that of the two species mentioned, although overlapping considerably into the southern portions of the eastern provinces of Canada. The only specimen that I have ever observed was captured along a creek bottom seventy miles north of Pittsburgh. Confined in a packing case, it was observed to strike its prison a dozen



A RATTLER DEN

This surprising action led to further experimentation; so that upon touching the detached head caused that member to swing about with open mouth and erect fangs! Such is the tenacity of purpose of the rattlesnake. A hundred feet further we came upon two more of the serpents and lost no time in killing them.

Although more or less common in Forest County, Pennsylvania, these were the first rattlesnakes I had ever encountered in the vicinity. A talk with the district game warden, however, disclosed the fact that the reptiles were becoming alarmingly numerous, he having killed more than a score in the course of the summer. He attributed the increase to the very mild winter failing to kill the usual number of snakes not hibernating below frost line.

The rattler's favorite habitat consists of low hills and mountains of a rocky nature with numerous ledges. Here the snakes find protection from the elements and retiring places from intruders. In a recent article appearing in a well-known periodical, this reptile was pictured as a ferocious and aggressive creature, seeking a fight at the

four feet. Dozens of specimens that I have examined and measured averaged three feet, ten inches. Ditmars reports one from the Berkshires in Massachusetts, measuring six feet, two inches. The common color is yellow or tan with dark, irregular edged bands. Its large fangs and the great amount of venom secreted makes the timber rattler's bite seriously dangerous, but compared with its larger allies, like the diamond back rattlesnakes of the southeast, it is inoffensive in the extreme. It strikes only when closely approached, usually making an attempt to avoid the encounter.

The copperhead, a member of the moccasin family, frequents practically the same territory as the preceding species, with the possible exception of Vermont, New Hampshire and the peninsula of Florida. Curiously, no venomous snakes are found in the state of Maine.

The average length of the copperhead is less than that of the timber rattler, a three foot snake being considered a large specimen. The color is vivid and well-defined, the body being a reddish brown (more or less intense), with a row of dark blotches ranging along the sides.

TIMBER RATTLESNAKE

times in the course of two days, each time emitting sufficient venom to visibly spatter against the sides of the box. Because of its fondness for human habitation, where it destroys rats and other vermin, it is rapidly disappearing. Dozens of these small reptiles were found and killed in the clearing off of Pymatuning Swamp in western Pennsylvania.

The large human population living within the range of these three serpents make it more or less necessary to take precautions against snake bite when frequenting sections where they abound.

As is usual with many other dangers preventative measures are the greatest safeguards. The best precaution consists of wearing hightopped leather boots, rubber boots, or some form of legging, the leather puttee being best. The strike of these snakes is seldom higher than the lower part of the calf, unless they happen to be on an elevation. And this last should make one frequenting the woods doubly cautious when climbing over rail or stone fences, stumps or fallen tree trunks or even brush heaps.

If you do any hunting or fishing in a

region where these serpents are numerous it is good life insurance to be equipped with an antivenin kit. The venom of both the rattlesnakes and copperhead is haemotoxic, affecting the red blood corpuscles, so that the same antivenin is effective for the bites of either. In this connection it might be of interest to add that snake venom is of two types, each with its characteristic properties. The haemotoxic type destroys the red blood corpuscles, causing a kind of rapid suffocation of the victim. The neurotoxic venom, as its name indicates, attacks the nerve centers of the victim, causing blindness and paralysis in rapid order. The coral snake of the south and the well-known cobras of Asia and Africa possess the latter type.

In case of snakebite, it is of the highest importance to cut across each fang mark with a sharp knife or razor blade. The cut should be as deep as the fangs penetrated, usually a quarter of an inch. Induce free bleeding and apply suction with a mechanical suction cup or with the mouth; making certain that the mouth and lips are free of abrasions and sores. Many authorities advise the making of numerous small incisions on and about the bite, (sometimes as many as one-hundred and fifty), and applying suction for a period of several hours.

Be prepared when in snake country. Always carry a kit containing a small quantity of potassium permanganate crystals, which makes a satisfactory antiseptic by the addition of a few crystals to a few ounces of water. A couple of razor blades, a ligature, preferably rubber, for the tourniquet, and a tube or two of snake bite serum completes the outfit. And best of all, try to remember that prevention is *far* better than the cure.

"FLYING" MEMORIES

by

RALPH WILSON,
Harrisburg

The water seemed to be on fire as the faint wisps of vapor rose from the surface of the pool. The calm water was unbroken as I sat down on an old log to enjoy the peacefulness that I had so suddenly found. My fly rod was idle in my hand, but the spell was soon broken as a faint dimple appeared on the surface near the lower end of the pool. A trout having a few flies for breakfast. A few false casts, and the fly landed gently on the water a few feet above the feeding fish. It floated slowly, so slowly that each moment was a drag on my nerves. The fly disappeared like the bursting of a small bubble, and a twist of the wrist set the hook. A brookie nearly a foot long. A beautiful fish, his dark back and white sides splashed with red dots, and a belly of dark orange. A fish well worth many boots full of water and wet clothes. He was laid carefully in the creel lined with hemlock. Isn't the first trout of the day always handled more reverently than the rest?

The next stretch of water proved to be deep riffles, and here and there the current had cut under the bank making dark pockets from which the water swirled and churned. No need for worry about line drag here, so I shot the fly well into the head of the rough water. Down, down the current it bobbed; a swirling sudden flash of yellow and the fly was gone. The line flashed up the stream,

and I let the fish play against the resilience of the rod. And only after a stubborn fight was he beached on a shallow gravel bar. This time it was a brown trout just over the foot mark. He was laid beside the other fish, with the thought, that for me, those two would fill the biggest creel ever made. I washed the fly, carefully freeing it of any foreign matter, blew the hackle back into place, and false cast it dry before applying more oil. The next cast, and things very suddenly change, the fly was hooked high in a black alder bush that I had failed to take into consideration as something that would have a liking for artificial lures. And getting the fly down again was harder than taking it out of the mouth of a trout. Leaves, worms and bugs fell upon me in clouds, some down my back, and others down my boots. The fly was retrieved, only to be found with the hook broken at the end of the shank. Better to have broken there than in the mouth of a trout, for then I could have bored anyone who would have the patience to listen, about the monster that got away, and left me with a broken hook.

Working up the stream, my efforts were rewarded with a brook trout that could not have been more than three inches long. The fly sticking out of his mouth made him look like a donkey trying to eat a bale of hay in one mouthful. He swam leisurely away after I released him.

The sun was burning overhead, and waters bore no sign of feeding fish. I sat down to rest and pass the time by going over my flies. Each one would bring a pleasant and different story to my mind. I must have dozed, for the sun was getting down in the west, and more flies were appearing on the water. From where I lay I could see the stream winding its way through an open meadow, a meadow that had once been a forest of big pines, as the mute stumps that dotted the stream bank and grassy slopes bore evidence. A hard, but easy place to fish a fly. A paradox you say, but—no obstacle to casting, but hard to keep out of sight. The first dozen casts brought nothing, but far up ahead I could see a trout feeding on the surface. The next cast and bang! I thought someone was trying to take the rod out of my hands. The fish had hooked himself, as I was sure I had nothing to do with it. Straight up stream he dashed, and down again, across to the other bank, and then straight toward me. This one was some fighter. All I could do was hold on, and I did hold on longer and better. Soon he came to the top, and laid on his side, against the strain of the line and current. As he was scooped out of the stream with the net, he measured just thirteen inches. To say a fighting brown is the best tribute I could pay. A huge rotten pine stump edged the stream a hundred feet above, and toward this I fished my way. I cast above the stump, and as the fly floated past the stump, well, there is no word or sound to describe it. It looked like an express train to me, only maybe larger, came out from under that stump, and took the fly in one loud gulp. For, what seemed to me like days, I was the center of a vast whirlwind, though it was only a few seconds. The line was loose on the rod. I was shaking like the aspen leaves that never cease to tremble, and I had to sit down. Slowly reeling in the line, I found half the leader gone, snagged



C. A. KNISS, MIFFLINBURG,
CAUGHT THESE BROWNIES IN
RAPID RUN, UNION COUNTY

by some rough object. I took the rod apart, and with faltering steps picked my way slowly back to the road. I couldn't spoil such a climax by fishing any more that day. But what a memory to relive, when far from the singing waters of a trout stream.

MY NEIGHBOR

by

W. W. BRITTON, Chambersburg

"Come over tonight, Bill, if you haven't anything important on hand. I want to talk with you."

"All right, Doc," I knew what he wanted—he wanted to talk about fishing, the subject nearest his heart.

I'm hardly inside the door when he puts his fine fly rod together and draws my attention to the new coat of varnish on it.

"How do you like that job?"

"That's a good job, Doc."

"Just wait until this summer."

Then it started. We fished from 7 P. M. until midnight right there in the living room, except once when we did get out in the backyard, and turned on the lights to do a little plug casting. We caught some nice ones there until I threw the plug over the radio aerial. Doc wasn't put out about that. He said I had possibilities and would have to keep on practicing. I don't know about that though. It's a pretty tough job to teach a rabbit hound to point quail. But any way it was one of the greatest fishing trips I have ever been on. And the nicest thing about the whole affair was that when I got home I didn't have to argue with my wife as to who was going to clean the fish.

Doc is working on me, but it looks as though I'll have to stick to the hickory pole and cork combination. Kinda old fashioned, I guess.

For the careful fisherman, trouting on a densely thicketed stretch of water is rare sport. There's a certain thrill in working into some of those hidden pools. And remember, that's where the big fellows like to lurk.

SEWERS OR FISHING STREAMS?

By Kenneth A. Reid

Member, Board of Fish Commissioners

IT has been estimated that of Pennsylvania's many thousand miles of splendid waterways, eighty-five per cent are polluted by man's activities to a greater or lesser degree. To state it very conservatively, at least fifty per cent of this pollution is absolutely unnecessary and has no justification whatever. Yet this very pollution, that is treated so lightly by the public, is the greatest single enemy to fishing in Pennsylvania—in fact, greater than all others combined. This reduction of potential fishing water through the agency of pollution is primarily responsible for congested fishing conditions existing in most parts of Pennsylvania, which in turn make the problem of good fishing more difficult for the Fish Commission.

Not only are the great majority of our waters out of the picture as potential fishing waters by reason of existing pollution, but those that are now fishing streams and being stocked by the Board are in constant jeopardy of being polluted at some future time under the existing pitiable status of the enforcement of our anti-pollution laws. Contrary to general belief, we have now and have had for some time, fairly adequate laws against pollution. The trouble lies in the fact that enforcement acts for the administration of these anti-pollution laws are entirely inadequate so that these laws have been inoperative and ineffective. To make a comparison for the sake of illustration, the situation is similar to the case of a hunter going afield in an excellent game territory with a splendid gun, but without any ammunition to put in this gun. What we need primarily is "ammunition" to enable existing legislation to hit the mark for which it was created.

Pennsylvania presents a picture of a strange paradox in conservation. Throughout the length and breadth of the United States she is held up as a model in conservation accomplishment. Under the control of the Department of Forests and Waters, the State now owns more than a million and a half acres of State Forest land. The hunters of Pennsylvania own nearly 350,000 acres purchased for them by their Game Commission with funds derived solely from their hunting licenses. The fishermen of Pennsylvania own ten splendid fish farms whose combined output of fish easily exceeds that of any other state in the Union, and like the State Game Lands, these are acquired and supported entirely from revenue derived from fishing licenses. We can talk about our iron and steel, our coal and other industrial products, but when one travels widely about the United States, and even in foreign lands, he soon finds out that what Pennsylvania is really famous for outside of her own borders is her accomplishments in conservation, and particularly the internationally known "Pennsylvania Game System." As evidence of these facts within the last biennium, representatives of eighteen states have contacted the Game and



Fish Commissions and made a survey of Pennsylvania's unique system with a view to modelling their own after it.

Now let us look at the other side of the picture and see where the paradox comes in. Visualize, if you please, nearly two million acres of State Lands on which the forests and the game are being intelligently managed. One of the primary purposes in the establishment of the forests was to afford protection to the watersheds which would assure an adequate supply of water in the future for citizens of the Commonwealth. Yet through the midst of some of these forests run streams so vilely polluted that their water cannot be used by either fish or human beings. What is the sense of protecting and conserving watersheds if water is to be rendered valueless by reason of uncontrolled pollution? Such is the picture of the paradox in Pennsylvania conservation—and it is one that every citizen should be ashamed of and interested in correcting. If the millions of dollars that are spent annually by municipalities and industry in elaborate treatment of water from our polluted streams to make it safe for human and industrial use were spent in treating this pollution at its source, the problem would be well on the road toward solution, and the expenditures could be classified as capital investments, bearing interest in the cause of pure water, instead of annual expenses in the treatment of a perennial patient.

In the beginning of this discussion I stated that at least fifty per cent of existing pol-

lution "is absolutely unnecessary and has no justification whatever." Without attempting to defend any pollution, I believe the problem should be approached in an orderly manner and that the first step should be the correction of that pollution that is entirely unwarranted from any viewpoint.

A study of the problem places the types of pollution under three different heads: First, *individual or "petty" pollution*, such as the common practice of throwing old tires, boots, bed springs, and whatnot into our watercourses. Also the practice (sometimes even indulged in by fishing cottages or clubs and frequently by country schools) of building outhouses on the bank of a stream. In the same category is the practice of some small hamlets of dumping their garbage by the truckload off a nearby bridge that spans an otherwise unpolluted trout stream. Such instances are plainly inexcusable and their solution is largely a matter of public education in decency and cleanliness. Our public schools could well give serious consideration to their responsibility in eliminating this unjustifiable form of pollution.

Second, *municipal sewage pollution*. There is little to be said on this subject as the case is a plain one. The dumping of raw sewage into our streams through open sewers is clearly illegal, but the progress of installing modern sewage disposal plants by Pennsylvania towns and cities has been woefully slow. An enlightened public with a firm belief in the wisdom and fairness of the Golden Rule would quickly speed up this program to completion.

Third, *industrial pollution*. This classification covers a multitude of sins—coal mines, tanneries, paper mills, chemical plants, textile mills, canning factories, dairies, and many others. For most of them there are tried and proven methods of disposing of their wastes at a reasonable cost. For a few, the problem has not yet been solved. If half the money spent in rendering polluted water fit for use were spent in research and development of treatment plants for correcting pollution at its source, the problem of pure water would be much nearer solution.

While holding no brief for industrial pollution, which is usually the most serious and concentrated of all forms, I think it is high time for the people of Pennsylvania to revise their ideas that watercourses are graves for all undesirable things and begin right at home in their clean-up campaign. When we have clean hands as individuals and as corporate groups by correcting the first two types of pollution, we can with much better grace demand that industry cease polluting our waters.

In the meantime there is a large field that needs only intelligent and concerted action for accomplishment. There are many hundreds, if not thousands, of abandoned industries in Pennsylvania that are not furnishing employment or any income to a single individual, but which are nevertheless polluting many hundreds of miles of streams to the detriment of many thousands of our people. The greatest single example is that of abandoned coal mines. Sufficient research and actual tests have been made along this line definitely to determine that the great majority of these mines can be effectively sealed so that the water issuing from them will no longer contain a serious acid content. Mine sealing by the Federal government is now being actively carried forward in a number of sections of the Com-

monwealth. With the method known, it only remains for an aroused public to demand that this wasteful and unnecessary pollution be stopped.

HIGH-FLYIN' ANGLERS

Phil Hartman, superintendent of the Erie Hatchery, tells us that anglers on Lake Erie are going ultra-modern, and reports the following incident related by Henry C. Schacht of Erie to back his argument.

According to Schacht, a party of his friends were on the ice at the upper end of the Bay early in February watching a large number of fishermen trying their luck. The anglers had congregated in a comparatively small area and were having good luck in fishing through the ice. Presently the roar of an aeroplane motor was heard, and the crowd noticed a plane swooping low over the frozen surface of the lake.

Taxiing to a halt, the plane stopped near the fishermen. Two anglers in the crowd immediately pulled down their wind-breaks, and gathered up their fishing-gear. Boarding the plane, they were soon lost to sight. This new method of transportation to fishing grounds aroused keen interest on the part of onlookers who immediately recognized the advantage an aeroplane offers in quick transportation when that fishing urge gets too strong to be denied.

SEALING MINES

Work is already being pushed forward along the Big Moshannon and Clearfield Creeks in Centre and Clearfield Counties to seal abandoned coal mines, according to a recent report. Both the Big Moshannon and Clearfield Creeks have, in the past, been subjected to much acid drainage from abandoned mines, and this C.W.A. project is a step in the right direction for clearing up pollution in the area they drain.

WORTHWHILE SLOGAN

Right in line with the Fish Commission's drive for better fishing is the following slogan suggested by Harry B. Davis, chairman of the Game Committee of the Reading Chapter, Izaak Walton League of America.

"If you put them back to swim away, they can bite again some other day."

SUCKER FISHERMAN LANDS PIKE-PERCH

Wall-eyed pike, otherwise known as pike-perch or Susquehanna salmon, are rarely taken by sucker fisherman in early spring. But George Rice of Lebanon upset the precedent, or near-precedent, while fishing for suckers at the juncture of Big Chickies Creek and the Susquehanna River in Lancaster County. At the time he was using the standard sucker bait, angleworms, and had just made his first cast when the wall-eye took the bait. It was only 12 inches in length, and was released immediately when Warden Frank Sanda of Steelton identified it and explained that it was not in season.

WHOSE TROUT?

One of those incidents that make the first day of the trout season unforgettable occurred shortly after midnight in the Yellow Breeches Creek, near Huntsdale, Cumberland county. Trout fishermen were literally swarming on the stream even before midnight, prepared for that first cast of the season when the clock struck the hour that permitted legal trout fishing.

Grouped about one of the smaller pools were fifteen fishermen, and lines swished into the water almost simultaneously. Presently an ardent first day angler had a strike. The trout, a ten-inch brownie, darted wildly about the pool as it attempted to escape. And believe it or not, the observer, who witnessed the catch, said that when it was brought from the water at least eight lines were tangled around the fish. After that, it was necessary to separate the lines to know just whose trout it was. A great game, this trout fishing.

A Fly-and-Spinner Catch

Dr. F. R. Knaub, of Chambersburg, furnished proof last summer on Tuscarora Creek, Juniata County, that fly-and-spinner fishing yields unusual catches of smallmouth bass and pickerel, according to Warden Charley Long of East Waterford. In one day's fishing, Dr. Knaub caught 19 bass and pickerel. Of nine bass, all were over 12 inches in length, while the 10 pickerel taken ranged in size from 15 to 19 inches.

Stream improvement and fly fishing are the two most effective methods by which the fisherman may improve his sport. A few hours work on favorite streams by fishermen, installing dams and deflectors will pay big dividends in better trout fishing in the years to come. Fly fishing not only will save many small trout, but it's sport supreme for the angler.



SAWMILL ON PADDY RUN, CAMBRIA COUNTY TROUT STREAM. THE OWNERS PAID A FINE FOR POLLUTING THE STREAM

Trout Streams in Northeast Counties



THE LOYALSOCK CREEK

FORESTS AND WATERS PHOTO

IN the northeastern counties of Pennsylvania, Wyoming, Bradford, and Sullivan counties are a number of fine trout streams that annually attract hundreds of fishermen. Most of these waters are good producers of fighting brook or brown trout.

In commenting on the trouting in these counties, Warden Myron E. Shoemaker of Laceyville, Susquehanna County, terms the fly-fishing excellent from May until the close of the season for trout on July 31. Individual taste, of course, dictates the patterns of flies that are effective. His own experience in fishing flies for trout, and he is an excellent fly fisherman, causes him to favor the blue quill, hare's ear quill, ginger quill, Wickham's Fancy, cahill, female beaverkill, and orange finn for early season. However, in suggesting the patterns, he declares a preference to the orange finn and cahill for general fishing.

"This orange finn," he writes, "is a fly which many fishermen are not acquainted with. It is made up as follows: Pure white wing, orange silk body, and orange and black hackles with the tips being orange. It is very effective for both brook and brown trout and, personally, I think that if brook

trout can't be taken with it the fisherman might as well go home. This fly can be purchased only, I believe, through Dr. H. W. Lyte, 427 North Street, Allentown, who makes it. Hooks, numbers 10, 12, or 14, are principally used."

Wyoming County

Four trout streams in Wyoming County are outstanding, Mehoopany Creek, North Branch Mehoopany Creek, Bowman's Creek, and Meshoppen Creek. Mehoopany and the North Branch are both mountain streams, swift and rocky. The trout fishing in Mehoopany Creek is all above Forkston, where brook trout predominate. To reach the best fishing in this stream means plenty of walking to the upper waters, which may be reached over highway route 487, turning off route 220 at Dushore. From Ricketts on route 487 it is necessary to walk.

While the North Branch of Mehoopany Creek is somewhat similar to Mehoopany Creek in character, it is not so swift and drains some cultivated land. Brook trout and occasional brown trout are taken from its waters. The lower waters of Mehoopany Creek and the Branch are accessible at

Forkston on highway route 87 either from Tunkhannock on route 6 or from Dushore on route 220.

Bowman's Creek, another favorite trout stream, may be reached on route 92, off route 6 at Tunkhannock, or from Wilkes-Barre on route 309, turning to route 92. The creek flows through Noxen.

Good meadow fishing is available on Meshoppen Creek and its two tributaries, Riley and White Branches. These streams flow chiefly through meadow land, although their banks are brushy. Brook trout predominate. They may be reached at Meshoppen on Route 6.

Bradford County

Shrader Creek, a mountain stream, is the only outstanding trout water in Bradford County. While brook and brown trout are present in this stream, the brookies predominate. Absence of roads near it makes stocking from the railroad necessary. It can be reached from Towanda, which is located on route 6 and 220, via Monroeton to Powell, then taking a dirt road paralleling the stream to Laquin, a distance of 10 miles. All of the trout fishing is above Laquin.

Sullivan County

In Sullivan County are the famous Loyalsock, the Little Loyalsock, Double Run, Lopez Creek, Hogland Branch, Glass Creek and Black Creek. These streams are all swift-flowing mountain waters in which brook trout predominate with the exception of the Loyalsock and Little Loyalsock where brown trout are numerous. They may be reached on route 220 from Dushore.

FOOD SUPPLY INCREASED BY STREAM IMPROVEMENT

Upon an abundant supply of natural food in Pennsylvania trout streams hinges to a major degree trout fishing of the future. This food supply is a determining factor on the size and number of trout in any stream. Frequently fishermen think of trout forage in the form of minnows, small suckers, crawfish, and larger types of aquatic life. Essential though this source of food supply may be, an equally important factor is the presence in our trout streams of minute aquatic organisms and availability of insect life. While larger trout prey upon minnows and other types of forage fish, growing fry and fingerlings rely upon smaller organisms for their existence.

Stream improvement is generally recognized as an outstanding method for increasing the supply of natural food in trout streams. Fertile beds of silt are formed and serve as breeding grounds for smaller organisms, as do sunken logs, brush and other material. Through the building of dams, retards, and current deflectors on our streams, production of trout forage is greatly enhanced. In more quiet pools and eddies, on sand bars formed by the current, and on water-soaked brush and logs, this vital source of trout forage is harbored, where it is available as food for the trout. These quiet waters may also serve as resting places for trout after they have been feeding in the current.

While current deflectors in some of our Pennsylvania streams are quite practical, the building of dams and retards, whether boulder or log, is in many instances highly desirable. In a former issue of PENNSYLVANIA ANGLER the manner in which boulder and log dams may be erected, and current deflectors constructed, was described. Another type of current deflector is known as the I-deflector, which may be used to advantage in splitting the current. Michigan has made notable progress in recent years in stream improvement, and deflectors of various types have been tried.

When installed in mid-stream, the I-deflector serves to deepen two pools. This type of deflector, erected with boulders, or logs, placed crosswise at midstream, throws the force of the current toward both banks. Immediately below the logs, sand bars may form in the comparatively quiet water. The top of the I-deflector should be flush with the summer water level of the stream. If logs are used they should be firmly anchored.

Midsummer is regarded as the most satisfactory and effective time for the work of stream improvement. Generally in July or August, streams are low, revealing areas suitable for improvement. From the angle of comfort, a day's work in the cold water of a trout stream is not so chilling at that time.



LANCASTER COUNTY FISH AND GAME ASSOCIATION MEMBERS
IMPROVING TROUT STREAM

An excellent method by which cover may be increased, the placing of trees, with all their branches in streams, has been suggested by E. R. Hewitt, noted authority on stream improvement. When such cover is introduced, it is advisable to stake the tree firmly. If the branches are resting in a position counter to the current, drift lodging against them will increase the effectiveness of the shelter for trout.

With replenishment of the underground water supply, the importance of small spring runs, or feeders to the main trout streams, has been increased. Not only do these feeders furnish a supply of cold water, thus aiding in keeping the temperature of the main stream at low level during hot weather, but they serve as ideal spawning grounds for trout.

Improvement of the feeder streams is a vital feature in stream betterment. During the prolonged drought, many of these feeder streams became clogged with brush and muck. This condition not only served to eliminate them as spawning grounds for trout, but resulted in warming of the temperature through slowing of the current and in places forcing the water into wider shallow areas exposed to the sun. Planting of shade brush on the banks of spring runs, and cleaning them out, where necessary, will benefit many of our trout streams.

Major trout streams, having few or no feeders, may be greatly improved by introduction of brush shelters. These shelters serve as ideal protection for young trout. In streams of this type, protection is of primary importance, for the fingerlings require protection not only from natural enemies, but from adult trout.

Brush shelters may be composed of entire bushes, or loosely woven bundles of brush, wired firmly to stakes to hold them in place. Green brush, owing to the fact that it lasts longer, is most suitable for this type of shelter. Where a side channel in a stream may be found, brushing is particularly effective. Brushing at the juncture of tributaries is desirable, for the brush serves as shelter for fingerlings dropping into the larger stream from spawning areas.

The effectiveness of dams and current deflectors on trout streams may also be increased by introduction of brush shelters. Overhanging brush and foliage is important

to trout waters, providing not only shade, but a harbor for insect life, a valuable source of food supply for trout.

LEGAL SIZE TROUT STOCKED HEAVILY

In preparation for invasion of trout streams by the anglers on April 16, hatcheries of the Fish Commission released 311,330 trout of six-inch legal size or over during the months of January, February and March.

Another significant feature in the stocking program for these three months was distribution of 1,008,000 minnows to serve as additional forage for game fish in Pennsylvania streams.

Following is a list of waters in the various counties stocked during the first quarter of the year:

Adams—trout, Little Marsh Creek, Conewago Creek, Toms Run, Carbaugh Run, Conococheague Creek or Irvin Run; minnows, Little Marsh Creek, Marsh Creek, Conococheague Creek, Conewago Creek, Carbaugh Run.

Allegheny—minnows, Allegheny River.

Armstrong—trout, Hauling Run, North Fork Pine Creek, Mill Run or Rinker Run, Scrubgrass Creek, Glade Run, Patterson Run or Little Buffalo Creek.

Beaver—trout, Big Traverse Creek, Brady Run or North Brady Run.

Bedford—trout, Yellow Creek, Potter Creek, Three Springs Creek, Shermans Valley Run, Flintstone Creek or Bean Cove Creek, Laurel Run, Cumberland Valley Run or Shobers Creek, Bobs Creek, Deeters Run, Shavers Creek, Beaver Creek, Raystown Branch of the Juniata River, Buffalo Creek; minnows, Raystown Branch Juniata River, Yellow Creek, Wills Creek.

Berks—trout, Trout or Powder Valley Run, Northwest Branch Perkiomen Creek, West Branch Pine Creek, Pine Creek or Oysterdale Creek, Mill Creek, Rauch Creek, Northkill Creek; minnows, Northkill Creek, West Branch Pine Creek, Pine or Oysterdale Creek, Northwest Branch Perkiomen Creek, Manatawney Creek, Maiden Creek.

Blair—trout, Bald Eagle Creek, Tipton Run, Shaw Run, Bells Gap Run, Blair Gap Run, Big Fill or Woormer Run, Van Scoyoc

River; minnows, Clover Creek, Piney Creek, Sandy Run.

Bradford—trout, Schroder Creek, Millstone Creek, Daggett Creek, Seeley Creek; minnows, Seeley Creek, Sugar Creek.

Bucks—trout, Cook Creek or Durham Creek, Beaver Run, Tinicum Creek; minnows, Queen Anns Creek or Bendix Creek.

Butler—trout, Black or Jacksville Creek, Hogue or West Liberty Creek, Little Connoquenessing Creek, North Branch Bear Creek, Bear Creek, Silver Creek, Chauncey or Chances Run, Little Buffalo Creek, Blacks or Furnace Run; minnows, Wolf Creek.

Cambria—trout, Beaver Dam Run, Findley Run, Big Laurel or Laurel Run, South Branch Blacklick Creek or Williams Run, Rogues Harbor Run, Beaverdam Run or Killbuck Run, Hinckstown Run, South Branch of Little Conemaugh River, Spring Run, North Branch Blacklick Creek, Bens Creek, Stewart Run, Duolos Run, North Branch Little Conemaugh River or Branoff Creek, Bender Run, Mud Lick Run; minnows, Hinckstown Run, Findley Run, Mudlick Creek, Beaver Dam Run or Killbuck Run, Chest Creek.

Cameron—trout, Mix Run, Portage Creek or Cowley Run, Lower Jerry Run, Brooks Run, Sterling Run, Clear Creek, Sinnemahoning Portage Creek, Driftwood Branch or Driftwood Creek; minnows, Wycoff Run, Sinnemahoning Portage Creek.

Carbon—trout, Wild Creek, Big Bear Creek, Aquashicola Creek, Quakake Creek, Pine Run, Mud Run, Pohopoco or Big Creek, Hickory Run, Hayes Creek, James Run; minnows, Pohopoco or Big Creek, Aquashicola Creek.

Centre—trout, Spruce Creek or Rock Spring Creek, Cherry Run, Little Fishing Creek, Pine Run or Sterling Run, South Fork of Beech Creek, Rapid Run, Lick Run, Mountain Branch, Black Bear Run, Elk Creek, Cold Stream, Little or Black Moshannon Creek, Marsh Creek, Laurel Run or Potters Stream, Pine Creek, Logan Branch, White Deer Creek, Sinking Creek, Penns Creek, Six Mile Run or Forge Run, Hosler Dam, Spring Creek, Poe Creek, Bald Eagle Creek; minnows, Laurel Run, Synagogue Stream, Penns Creek, Sinking Creek, Six Mile Run.

Chester—trout, Rock Run, Valley Creek, French Creek, Chester Creek, Pusey Run, Black Horse Run, Doe Run, Lyndell Creek, Two Log Run, Birch Run; minnows, Chester Creek, Brandywine Creek, East Branch Octoraro Creek, Buck Run.

Clarion—trout, Buck Run, Mahles Run, Deer Creek, Toms Run, Mill Creek or Big Mill Creek, Step Creek, Little Piney Creek; minnows, Red Bank Creek, Deer Creek.

Clearfield—trout, Upper Three Runs, Hackenberry Run, Whiskey Run, Deer Creek, Sawmill Run, Sandy Creek, North Wilmer or North Witmer Run, Montgomery Creek or Run, Moshannon Creek, Bennetts Branch Sinnemahoning Creek, Mosquito Creek, Trout Run, South Witmer or Wilmer Run, Bigler Run or Hughey Run, Laurel Run, Lick Run, Little Clearfield Creek; minnows, Mosquito Creek, Montgomery Creek, Laurel Run, Trout Run.

Clinton—trout, Trout Fork or Trout Run, Cherry Creek, Backer or Baker Run, North Branch Tangascotack Creek, Shingle Branch



CANNIBALISM ILLUSTRATED—
A BIG PICKEREL AND ITS PREY
OF THE SAME SPECIES

or West Branch Young Womans Creek, Kettle Creek, Long Run, Big Fishing Creek, Chatham Run, Monument Run, Twin Run, Right Branch Young Womans Creek, Hammersley Forks, Antis or Rauchs Creek, Big Fishing Creek, Paddy Run, Hyner Run, Cedar Run, Tangascotack Creek; minnows, Bald Eagle Creek, Big Fishing Creek, Long Run, Kettle Creek.

Columbia—trout, Little Fishing Creek, Coles Creek, Roaring Creek, Fishing Creek; minnows, Coles Creek, Huntingdon Creek, Fishing Creek, West Creek, West Branch Fishing Creek.

Crawford—trout, McLaughlin Run, North Branch Sugar Creek, North Branch of Middle Branch of Sugar Creek, West Branch Cusawago Creek, Mosey Run, Federal Run, Gravel Run, Wolf Run, Muddy Creek, East Branch Muddy Creek, Kelly Run, Stearns Run, Patrick Run, Thompson Run, Little Sugar Creek, Brannon Run, Negus Run, East Branch Muddy Creek, Middle Branch Sugar Creek.

Cumberland—trout, Big Springs Run, Oldtown Run, Bird Run, Trindle Springs, Alexandria Springs Run, Mount Rock Run, Crockleys Run, Green Springs, Hogestown Run, Mountain Creek, Letort Springs Run, Big Springs; minnows, Conodoguinet Creek, Yellow Breeches Creek.

Dauphin—trout, Stony Creek, Rattling Creek, East Branch Rattling Creek, West Branch Rattling Creek; minnows, Clarks Creek, East Branch Rattling Creek, West Branch Rattling Creek.

Delaware—trout, Ridley Creek; minnows, Darby Creek.

Elk—trout, Medix Run, Big Run, East Branch Spring Creek, Hicks Run, East Branch Clarion River, Mohan Run, Island Run, Maxwell Run, Wilson Run, Trout Run, Straight Creek, Kersey Run, Belmuth Run, Laurel Run, East Branch Millstone Creek, Bear Creek, Hunters Run, Mosquito Creek; minnows, Kersey Run, Trout Run.

Eric—trout, Little Conneauttee Creek, South Branch French Creek, Beaver or Beaver Dam Run, Crooked Creek, Bear Creek, Trout Run; minnows, South Branch French Creek.

Fayette—trout, Laurel Run, Back Creek, Buck Run, Rubles Run, South Fork Moun-



tain Creek or Pine Creek, Mill Run, Little Sandy Creek, Mill Run or Big Mill Run, Dunbar Creek, Mill Run or Ramcat Run, Laurel Run or Morgan Run, Big Meadow Run.

Forest—trout, Hemlock Creek, The Branch or North Salmon Creek, Spring Creek, Maple Creek, West Branch of Blue Jay Creek, Little Hickory Creek, Little Coon Creek, Johns Run, Otter Creek, Blue Jay Creek, Bobs Creek, Ross Run, Fork Run, Beaver Creek, East Hickory Creek or Big Hickory Creek, Lamentation Run, Bear Creek, Hunter Run, Salmon Creek or Big Salmon Creek, West Branch Millstone Creek, Watson Branch, Tubbs Run, Blue Jay Creek; minnows, Spring Creek, Blue Jay Creek.

Franklin—trout, Falling Springs Creek; minnows, Carbaugh Run, East Branch Little Antietam, Conococheague Creek.

Fulton—trout, Nine Mile Creek, Spring Valley Run, South Fork Brush Creek, Oregon Creek, Little Aughwick Creek, Wooden Bridge Creek.

Huntingdon—trout, Licking Creek, Spruce or Rock Springs Run, Nine Mile Run or North Branch Little Aughwick Creek, Little Aughwick Creek, Saddler Creek, Shavers Creek, Spruce Run or Springs Run, Laurel Run; minnows, Spring Valley or Big Spring Run, Aughwick Creek.

Greene—minnows, Enslow Fork of Dunkard Fork Creek, South Fork of Dunkard Fork Creek.

Indiana—trout, Little Mahoning Creek, Brush Creek, North Branch Little Mahoning Creek, South Branch Twolick Creek, Little Yellow Creek; minnows, Little Mahoning Creek, Mudlick Run, Little Yellow Creek.

Jefferson—trout, Little Mill Creek, Horam Run, Rattlesnake Run, North Fork Red Bank Creek, Clear Creek, Callen Run; minnows, Red Bank Creek, East Branch Mahoning Creek.

Juniata—trout, Lost Creek, Big Run, Licking Creek or East Licking Creek, Liberty Valley Run; minnows, Licking Creek, Tuscarora Creek.

Lackawanna—trout, Gardner Creek, Roaring Brook, Lehigh River; minnows, Lehigh River, Roaring Brook.

Lancaster—brook trout, Donegal Creek, Gladfelters Creek, Climbers Run or Steinman Run, Big Chickies Creek, Charles Run, Rock Run or Sawmill Run, Muddy Run, Seglog Creek, Fishing Creek, Stewarts Run or Bone Mill Creek, Indian Run or Trout Run, Hammer Creek, Swarr Run or Governor or Snipe Run; minnows, Big Chickies Creek, Conowingo Dam, Safe Harbor Dam, Holtwood or McCall's Ferry Dam, Conestoga Creek, Cocalico Creek, Middle Creek.

Lawrence—trout, Right Branch Little Neshannock, Taylor Run, Deer Creek, Jamison or Elliott Creek, Big Run, Little Neshannock Creek, Hottenbaugh Creek; minnows, Big Run, Taylor Run, Little Neshannock Creek.

Lebanon—trout, Mill Back or Mill or Newmantown Creek, Snitz Creek, Hammer Creek, Indiantown Creek; minnows, Snitz Creek, Swatara Creek.

Lehigh—trout, Little Lehigh River, South Branch Saucon Creek, Cedar Creek, Big Trout Run; minnows, Jordan Creek.

Luzerne—trout, Harvey's Creek, Nescopeck Creek, Bowman's Creek, Wapwallopen Creek, Huntingdon Creek, Hunlocks Creek, Bear Creek, Pine Creek; Shades Creek, Stoney Run; minnows, Pine Creek, Huntingdon Creek, Philips Creek.

Lycoming—trout, McMurrin Run, Nippenoise or Raunch Creek, Black Hole Creek, Grays Run, Little Bear Creek, Fourth Gap Creek, Trout Run, Pleasant Stream, Larrys Creek, Muncy Creek, Upper Pine Bottom Run, West Mill Creek, Hogland Run, English Run, Blockhouse Run, Muncy Creek, Little Pine Creek, Lycoming Creek, Loyalsock Creek, Wallis Run; minnows, Loyalsock Creek.

McKean—trout, Two Mile Run, Fuller Brook, Sugar Creek, North Branch Sugar Run, West Branch Tuneneguent Creek, Large Run, Marvin Creek, South Fork Kinzua Creek, Seven Mile Run, Kinzua Creek, Chappel Fork Creek, Bell Run, Comes Creek, West Clarion Creek; minnows, Sugar Run, West Branch Tuneneguent Creek, Two Mile Run, Chappel Fork, Kinzua Creek.

Mercer—trout, West Branch Little Neshannock, Blocks Run, West Branch Wolf Creek, Lackawannock Creek, Mill or Pardoe Creek, Mill Run, Hanna Run, Johnson Run, Deer Creek, Mill Creek, Big Run, Probst Run, Little Neshannock Creek, Wolf Creek, Sandy Creek, Little Sandy Creek; minnows, Little Shenango River, Little Neshannock Creek, Neshannock Creek, Shenango River, Sandy Creek, Little Sandy Creek.

Mifflin—trout, Musser Run, Licking Creek, Strodes Mill Run, Long Meadow or Weber Run, Kishacopuillas Creek.

Monroe—trout, McMichaels Creek, East Branch Tobyhanna Creek, Cherry Creek, Aquashicola Creek, Dotter Creek, Tobyhanna Creek, Pocono Creek, Buckwa Creek, Big Bushkill Creek, Buckhill Creek, Pohopoco Creek, Brodheads Creek, Middle Branch Brodheads Creek, Sambo Creek, Paradise or Analomink Creek, Lehigh River; minnows, Cherry Creek, Brodheads Creek, Aquashicola Creek, Big Bushkill Creek, Pocono Creek, Pohopoco Creek, McMichaels Creek.

Montgomery—trout, Mill Creek; minnows, Perkiomen Creek.

Northampton—trout, Jacobus Creek, Waltz

Creek, Mud Run, Coffeetown Run, Little Bushkill Creek, Martins Creek, Hokendauqua Creek, Bushkill Creek, Monocacy Creek, Saucon Creek, Indian Creek or Birch Creek; minnows, Bushkill Creek, Delaware River, Saucon Creek, Indian Creek, Hokendauqua Creek.

Northumberland—minnows, Chillisquaque Creek.

Perry—trout, Horse Valley Run, Laurel Run, Houston Run; minnows, Shermans Creek.

Philadelphia—trout, Wissahickon Creek.

Pike—trout, Big Bushkill Creek, Indian Ladder Creek, Little Bushkill Creek, Raymondskill Creek, Shohola Creek, Sawkill Creek, Twin Lakes Creek, Middle Bushkill or Saw Creek, Shohola Creek, Kellam Creek, Mill Rift Creek, Dwarf Kill Creek; minnows, Dingman's Creek, Middle Bushkill Creek.

Potter—trout, East Fork First Fork Sinnemahoning Creek, Little Kettle Creek, First Fork Sinnemahoning Creek, Genesee Fork of Pine Creek, Cross Forks Creek, West Branch Pine Creek, Cowanesque River, Left Hand Branch or West Branch Dingman's Run, Dingman's Run, West Branch Genesee River, Nine Mile Run, West Branch Portage Creek, East Branch Portage Creek, Cushing Creek, Middle Branch or Gold Branch Genesee River, West Branch Fishing Creek, Dry Run, Allegheny River, East Branch Fishing Creek, Eleven Mile Creek, Luddington Branch, Fishing Creek, Pine Creek, Kettle Creek, Mill Creek; minnows, Kettle Creek, Mill Creek, Oswayo Creek, Cross Fork, Allegheny River, Pine Creek.

Schuylkill—trout, Deep Creek, Flicker Creek, Bear Creek, Black Creek, Spiece Run or Spangler Run, Little Catawissa Creek, Neifert Creek, Cold Run, East Branch Little Schuylkill River, Locust Creek, Tumblin Run, Rouchs Creek, Mahoning Creek, Big Creek or Moss Glen Creek, Fishing Creek, West Branch Fishing Creek, Rattling Run; minnows, Bear Creek, Big Creek or Moss Glen Creek, Little Catawissa Creek.

Snyder—trout, North Branch Mahantongo Creek, Swift Run, Brickhart Run or Mitchell Run, Trout Run or Shawerville Run, Kuhn-Hooven Run, Aigler or Schrader Run, Krepp Gap Run; minnows, Middle Creek, Penns Creek.

Somerset—trout, Tub Mill Run, Shafer or Lohr Run, South Fork Bens Creek, Elklick Run, Big Piney or Piney Run, Sandy Run, Breastworks Run, Clear Shade Creek, Brush Creek, Koozer Run or Hoozer Run, Negro Glade Run or McLintock Run, Blue Hole Run, Deeters Run or Laurel Run, Wills Creek, Jones Mill Run, Laurel Hill Creek; minnows, Laurel Hill Creek.

Sullivan—trout, Mill Creek, Elklick Run, Big Muncy Creek, Double Run, Hoagland Branch, Lopez Creek, Loyalsock Creek, Glass Creek, Pole Bridge Run, Black Creek, Lick Creek; minnows, Loyalsock Creek.

Susquehanna—trout, Harmony Creek.

Tioga—trout, Cedar Run, Bailey Creek, Mill Creek, Big Run, Long Run, Pine Creek.

Union—trout, Buffalo Creek, Rapid Run, North Branch Buffalo Creek, Beaver Run, Spring Creek, Half Way Run or Pine Swamp Run, White Deer Creek, Laurel Run, Penns Creek, Weikert Run, Bear Run, Corls Run, Slide Hollow Run; minnows, White Deer Creek, Buffalo Creek.

Venango—trout, Richy, Cherry, Panther or Prather Run, South Fork Sandy Creek, Hemlock Creek, West Pithole, Mud Branch of Sugar Creek, East Sandy, Little Sandy, Lower Two Mile Run, Tarkill Creek, Mill Creek, Horse Creek, East Branch Sugar Creek, East Branch Wolf Creek, Upper Two Mile Creek.

Warren—trout, Coffee Creek, Phelps or Spencer Run, Jackson or Ackley Run, Perry McGee Run, McGuire Run, Dunns Run, Mead Run, Matthews Run, Willow Creek, Four Mile Creek, Upper Sheriff Creek, Lower Sheriff Creek, Tionesta Creek, West Hickory Creek, East Branch Tionesta Creek, Brown Run, Pine Creek, Ben George Creek, Rock Hollow Run or Arcade Run, Tidioute Creek, East Hickory Creek, Four Mile Creek, Upper Sheriff Creek; minnows, Allegheny River, Tidioute Creek, Phelps Creek or Spencer Creek, McGuire Run, Little Brokenstraw Creek, Conewango Creek.

Wayne—trout, Lehigh River, Middle Creek, Little Equinunk Creek, West Branch Lackawaxen River, Johnson Creek, Moss Hollow Run, Dyberry Creek, Lackawaxen River, Wallenpaupack Creek, Big Branch Dyberry Creek, North Branch Calkins Creek, Big Branch Dyberry Creek, Shehawken Creek, Waymart Branch Lackawaxen River; minnows, West Branch Lackawaxen Creek, Dyberry Creek.

Westmoreland—trout, Powder Mill Run, Camp Run, Loyalhanna Creek, Linn Run, Pike Run, South Fork Mill Creek, Furnace Run, Roaring Run, Indian Creek, Middle Fork Mill Creek, Shannon Run, Jacobs Creek, Little Pucketa Creek; minnows, Indian Creek, Loyalhanna Creek.

Wyoming—trout, Meshoppen Creek, Mehoopany Creek, West Branch Meshoppen Creek, North Branch Mehoopany, Bowman's Creek, Riley Creek; minnows, Meshoppen Creek, North Branch Susquehanna River.

York—trout, Orson Run, Rehmayer Hollow Run; minnows, North Branch Bermudian Creek, Bermudian Creek, South Branch Codorus Creek.

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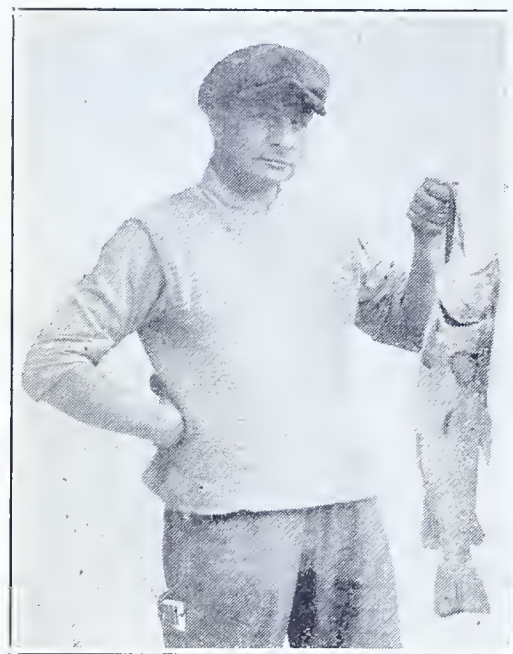
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ED. BOSLER, PIKE COUNTY, WITH
A 22-INCH BROWNIE

While April trout fishing was in the angling limelight last month, splendid catches of other fish, particularly suckers and yellow perch were also reported. High water which greeted the anglers in their initial invasion of the trout streams receded somewhat, and early season catches indicate that a banner season for the speckled kings is in the making. The largest trout reported to the Fish Commission was a four pound brownie, 22 inches in length, taken on the Yellow Breeches creek in Cumberland county. It succumbed to the lure of a minnow presented by McClay Gibson, veteran Carlisle angler.

Fifteen inches of ice on Lake Wallenpaupack on March 31st did not prevent George Long of Scranton from taking a banner catch of yellow perch from that famous fishing ground. Long's catch numbered 24 perch, ranging in size from 10 to 14 inches, according to Warden John Schadt, Lake Ariel.

The best trout fishing on the upper waters of Kettle Creek in the memory of old time fishermen who annually try this famous stream is reported this year by Horace Boyden, warden at Wellsboro, Tioga County. L. H. Wood, district game protector, who patrolled the stream on the first day of trout season reported the following amazing catch. Of 36 fishermen interviewed, 23 had taken the individual limit of 20 trout. The 36 anglers who braved conditions on opening day had a combined catch of 652 trout.

Favorite flies on north tier waters, particularly in Tioga County, are the golden spin-

ner, cahill, and willow. Good early season catches on the Genesee Fork of Pine Creek were made with minnows.

Bob Strause, Summit Station, caught 16 trout from Bear Creek on opening day, according to Warden Anthony Lech, Shenandoah. The trout ranged in size from 7 to 10 inches. Other catches were Jake Chebinsky, 18 trout, 8 to 15 inches, Still Creek dam; Joe Hama, Smiler Young, Joe Hardy, Harry Gibson and Mel Elliott, Shenandoah anglers, caught 20 trout apiece from Dil's Town beaver dam at Albrightsville.

Great trout fishing has been reported by Warden J. Albert Johnson, Bradford, in the North Branch of Sugar Run. The following anglers made splendid catches during the first week, their trout ranging in size from six to 17 inches; Clyde Johnson, Harry Johnson, and Morris Greenbury, Bradford, and Victor Ericson, Corydon.

The famous Big Spring, Cumberland County, had its quota of anglers on opening day, according to Warden George James, Carlisle. Some of the anglers making outstanding catches were C. McCallister and Jacob Falenstock, Springfield, Bill Hemminger, Neville, Charles Heflinger and Ben Davis, Shippensburg. A magnificent 14-inch brook trout was landed by Fred McCallister of Shippensburg.

Fifteen nice brown trout were taken on opening day near Bookers Mills on Tionesta Creek by Harry Hetrick of Clarendon, according to Warden R. C. Bailey of Youngsville. Frank Aberg, Youngsville, made a nice catch in Irvine Run.

Hammersley Fork, one of the outstanding trout streams in Potter County, lived up to pre-season predictions of great trout fishing on the first day, according to Special Warden George Cross of Renovo. The best catches were made by minnow fishermen, he writes. The 53 fishermen he interviewed had taken a total of 545 trout. Exceptional catches were made by Leo Rhoney and Stanley Cumming, Renovo, and Ed. Munn, Warren. Fishing in Trout Run Richard Wylocker, Hammersley Fork and Leonard Mulligan, Williamsport, also scored heavily on opening day.

Late March and early April sucker fishing in the lower waters of Spring Creek yielded some fine catches of these fish, according to Warden Dave Dahlgren of Philipsburg, Centre County. Some of the outstanding catches were made during March. Dave Miles, Bellefonte, caught 25 suckers in a

day's fishing, Harry Mattern, Philipsburg, 20 suckers in McCoy's dam, Chester Emil, Bellefonte, seven, and Forrest Young, Bellefonte, 11 suckers.

From Warden W. E. Wounderly of Reading comes word that Berks county sucker fisherman also found their streams offering an abundance of suckers. Ed Houck caught 25 in the Conestoga Creek, near Morgantown, and James Spatz, 21, at the mouth of Willow Creek. Special Warden John Rothermel reports that John Garret and his two sons of Wernersville caught 300 suckers during the winter months while fishing in the Tulpehocken near Blue Marsh.

Eighty-four suckers in four days' fishing is the record set by Harry Dewey of Gaines, Tioga County, writes Warden Horace Boyden of Wellsboro. In three of the trips he caught his limit of suckers.

Word has been received of heavy catches of suckers in the North Branch of the Susquehanna River. Warden M. E. Shoemaker reports a typical catch from the river near Wyalusing. Gulio Toni and Pasquale Fonti, of Exeter, Adolph Pisaneschi, Joe Carpenter and Joe Biogotti of Wyoming had a total catch of 40 suckers and one catfish. Some of the suckers weighed four pounds apiece, while their average weight was two pounds.

During March the bullhead catfish in Big Chickies Creek, Lancaster County, were biting freely and some good catches were made. Charles Barclay, Columbia, caught five big fellows, and Huston Greider, Columbia, two large catfish and one sucker, according to Warden Frank Sanda, Steelton.

Wardens Dewey Grant and George Sperring both vouch for this one, so it must be right. They were fishing in Pine Creek several years ago. Suddenly a 10-inch bass zipped frantically over the water into the shallows a short distance from Sperring. And following in its wake was the largest bass that Sperring says he ever saw. The monster bronzeback, every inch of two feet in length, he says, plunged into the shallows in pursuit of the smaller bass, and finally, near shore, almost trapped itself. However, it succeeded in turning back again to deeper water.

Remember in fishing fast mountain streams, that a stone overturned or moss torn from a rock in passing sends just enough cloudy water downstream to alarm timid mountain trout. For this reason, when trying small trout streams, don't wade in the water more than necessary.



FISHIN' IN MAY

HIGHWAY DEPT. PHOTO

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JUNE
1934

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JUNE, 1934
Vol. 3 No. 6

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Want Good Fishing?
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BOARD OF FISH COMMISSIONERS

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Commissioner of Fisheries

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PENNSYLVANIA ANGLER

JUNE, 1934

VOL. 3

No. 6

EDITORIAL

The Average Fisherman and Bass Conservation

ANY bass fisherman who ruthlessly tears a bass under legal size from the hook, carelessly tossing it back into the water to die, is doing just as much to injure the future of Pennsylvania fishing as is the trout fisherman who thoughtlessly destroys an undersize brook or brown trout. Pennsylvania is faced today by two major problems in furnishing better fishing. First, there is the constant menace of pollution which has definitely limited our water areas capable of sustaining fish life. Second, an evergrowing army of anglers seek sport on suitable fishing waters. In meeting this constantly increasing demand our hatcheries are being maintained at a production peak. Curtailment of available fishing waters and this increased number of anglers constitute the outstanding factor for consideration in the drive for better fishing. How may the individual fisherman do his part to improve not only his own sport but the sport of others? Two possible methods are presented.

Improvement of trout waters has been stressed before. This system of bettering the fishing may also be applied effectively to warm water streams, lakes and ponds. A primary consideration in the abundance of bass and other game fish is sufficient cover for them. Old sunken logs and trees with branches intact, weed beds and similar cover afford

not only ideal protection for baby fish of game species, but serve as incubation areas for live forage so essential to their growth. Minnows, tiny aquatic organisms, and other live food might be mentioned in this connection. While it is true that cover of this type may at times cause difficulty for the fisherman who is casting on such an area, the slight inconvenience resulting is more than outweighed by a greater abundance of fish to be caught.

Outweighing in importance even the warm water stream improvement angle for the average fisherman who wants to do his part in bringing about finer sport is a form of fishing now growing in popularity by leaps and bounds. I refer to fishing for bass and other warm water species of game fish with fly and fly and spinner. Any fisherman who has caught a bass weighing even one pound on the sporting fly rod and a small feathered lure is almost certain to become a convert to this splendid art in fishing. When he has adopted this method, he is effectively doing his part in fish conservation. He is saving hundreds of bait fish essential to any good bass water; he is also saving many bass too small to be legally taken. An area of bass water in which natural food is depleted must eventually become poor bass water. These great game fish require live food in abundance to grow to large size and reproduce. Every minnow or other form of live bait taken from such water makes it just that much less capable of producing bass of maximum size and number.

An undersized bass taken on the artificial fly is seldom if ever hooked deep in the gullet. The reverse applies to thousands of small game fish taken on live bait, which, with characteristic greed, they frequently swallow. To remove a small bass from the hook after it has swallowed a minnow is usually to destroy it. Hooked in the front part of the mouth on an artificial fly, the little fellow may generally be released carefully with slight if any injury resulting. It is apparent, therefore, even by this short comparison of the two methods of fishing, that the fly fisherman is in a far better position to insure

better bass fishing in the future than is the angler who relies on live bait.

But there is another feature in fly fishing that has particular appeal for the average fisherman. It eliminates all the fuss and bother coincident with securing live minnows or other natural baits, keeping them alive until ready for fishing, and lugging a heavy bait bucket about. It is also less expensive, for a well made fly should last two seasons under average fishing conditions.

Fly fishing affords a real opportunity to derive the greatest pleasure out of angling. The deftness of a cast, placing the lure just where you want it, and that feeling of suspense that comes when the fly strikes the water make every minute of fly fishing on a good warm water stream satisfying to the highest degree. I sincerely believe that it is forging to the front as a favorite sport for Pennsylvania fishermen.

Until we as individuals do our part in conserving the fish supply of stream and lake, Pennsylvania fishing cannot be effectively bettered. While the hatcheries' output is constantly increasing, we must realize that suitable conditions under which stocked fish can live is just as essential as the stocking itself. In line with this thought, the average fisherman holds the key to the future of his sport. His cooperation in improving fishing waters, and particularly in saving young undersized game fish and bait fish, will weigh heavily in the balance for general fishing improvement.

The drive for better fishing, to succeed, must have the unqualified backing of every fisherman. The future of our sport demands united and aggressive action on the part of those who today enjoy it. Certainly the objective to be attained is worth the whole-hearted cooperation of our anglers in achieving it.

O. M. Dribben

Commissioner of Fisheries.

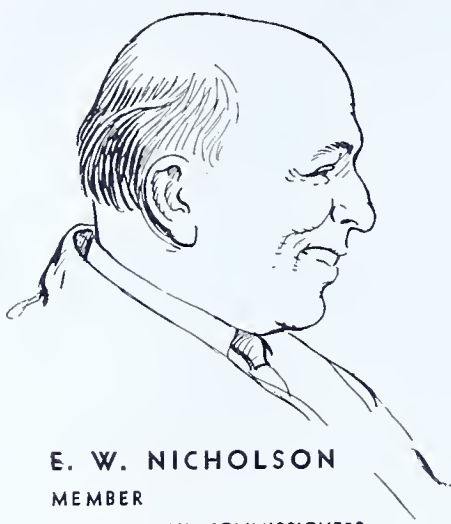
PERSONALITIES AT SPRING CREEK

Sketches by GEORGE GRAY



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WARDEN IN CHARGE
SPRING CREEK

SPRING CREEK OPENING OUTSTANDING SUCCESS

THE fisherman ruled supreme at the Fish Commission's new trout farm and stream improvement project on May 25 when it was formally opened to the public. Deftly casting dry and wet flies over ideal pools and eddies, hundreds of anglers tested their skill against fighting brook, brown and rainbow trout. There was action aplenty and enough trout over ten inches in length were taken to satisfy the most exacting fishermen.

Of particular interest to many of the visitors were fly casting and plug casting exhibits. Art Neu, of Newark, N. J., former national fly casting champion, was on hand to give pointers on the fine art of casting a dry fly. He was ably assisted by Joe Messenger of West Virginia. The plug-casting limelight was held by Charles Ward, president of the National Association of Scientific Angling Clubs, Pittsburgh.

On the opening day, fishermen from 38 counties tried their luck in waters teeming with trout. They found on their visit ample demonstration of the advantages to be derived from stream improvement as advocated by Commissioner of Fisheries Oliver M. Deibler. Throngs of people visited the first section of 40 trout raising ponds where at the present time over 350,000 rapidly growing brook, brown and rainbow trout are being held. The new administration building, attractively furnished and its walls adorned by giant mounted trout and other game fish, served as a central point of activity for visitors.

In the section reserved for women anglers, feminine disciples of Izaak Walton demonstrated real fishing skill. Milady succeeded in taking her two trout without difficulty, and the fish responded nobly by striking the flies presented with all of the vim and vigor of well-meaning trout. The ladies' fishing section, under the capable direction of Mrs. Edgar W. Nicholson of Philadelphia, proved to be a feature that attracted many of the Spring Creek visitors.

Of course, the record trout of the day had to be taken in true-to-form fashion. The honor of catching the biggest speckled king on this occasion fell to Dave Shuey, seven years old, of Bellefonte. Dave put one over on the assembled fly casting artists by landing a 22½ inch brown trout weighing four pounds. In approved boy fashion, his tackle consisted of a cut rod and heavy line, and he was a happy boy when Commissioner Deibler congratulated him on his catch in behalf of the Fish Commission.

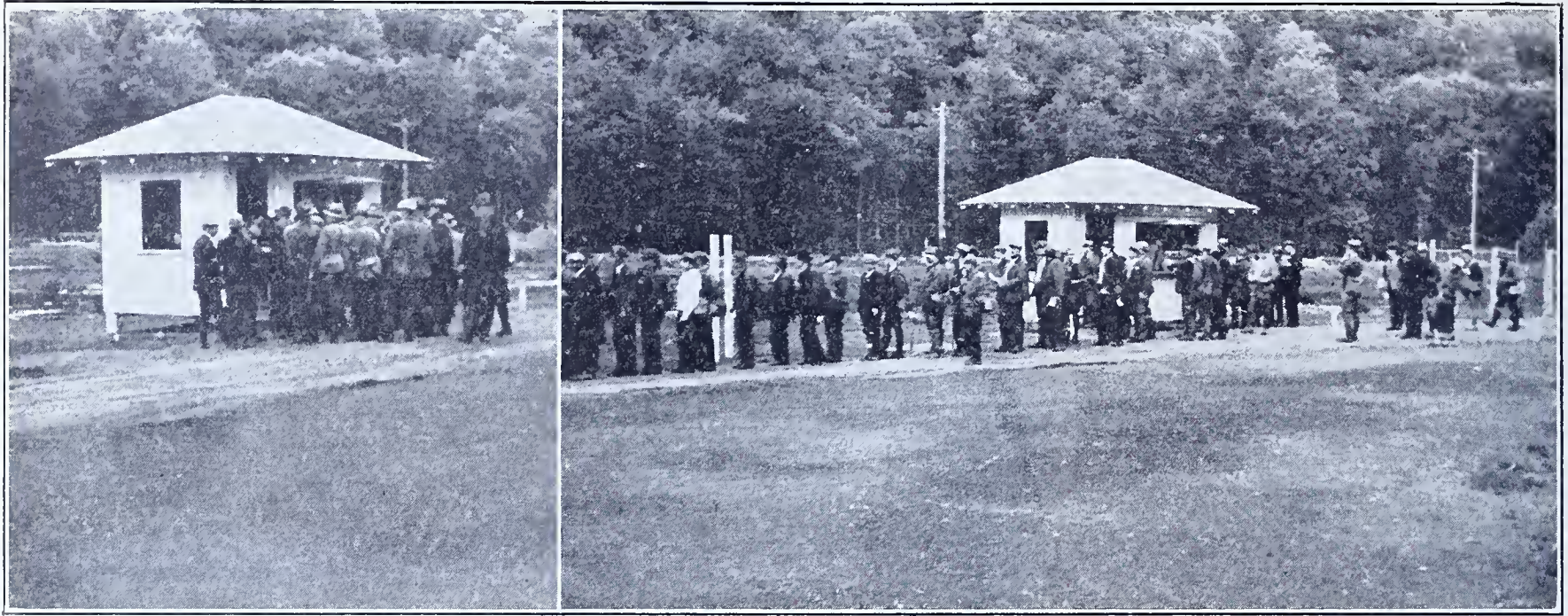
Included in the list of guests at this banner event of the fishing year in Pennsylvania were noted conservationists from this and other states. Attending were Edward R. Hewitt, famous stream improvement authority, New York, Deputy United States Commissioner of Fisheries Charles E. Jackson, Seth Gordon, president of the American Game Protective Association, M. S. James, in charge of Fish Culture, U. S. Fish Commission, Carl D. Shoemaker, Secretary of the United States Senate Committee



COMMISSIONER DEIBLER CONGRATULATES DAVID SHUEY
FOR LANDING LARGEST TROUT OF THE DAY

on Wild Life Resources, all of Washington, D. C., W. O. Hayford, superintendent of the Hackettstown, New Jersey, fish hatchery, Secretary of Agriculture John A. McSparian,

Secretary of the Commonwealth Richard J. Beamish, Phil Platt, vice-president of the Izaak Walton League of America, Grover Ladner, president of the Pennsylvania Fed-



SCENES AS FISHERMEN REGISTERED AT SPRING CREEK PROJECT ON OPENING DAY

eration of Sportsmen's Clubs, Dean R. L. Watts of Pennsylvania State College, Adolph Muller, president of the Pennsylvania Board of Game Commissioners, Ernest Harwood, secretary of the Game Commission, and Dr. Samuel H. Williams, member of the Board of Game Commissioners.

Owing to unfavorable weather conditions, Governor Gifford Pinchot, an ardent fly fisherman and conservationist, was unable to come by plane to the Spring Creek opening.

Representing the Board of Fish Commissioners at the event were Oliver M. Deibler, Commissioner of Fisheries, C. R. Buller, Deputy Commissioner of Fisheries, Leslie W. Seylar, McConnellsburg, Dan R. Schnabel, Johnstown, Kenneth A. Reid, Connellsville, Edgar W. Nicholson, Philadelphia, Roy Smull, Mackeyville, George E. Gilchrist, Lake Como, members of the Board, and H. R. Stackhouse, secretary to the Board.

Little Betty Joanne Parks of Altoona, four years old, demonstrated the fact that her ability to land fish was not over-rated when she scored a double on brook trout in the ladies' fishing section.

The Spring Creek project bids fair to become a model not only for stream improvement in Pennsylvania but in other states. Combining as it does an outdoor laboratory for the study of increasing productiveness of trout waters, and a school where fishermen may learn to cast an artificial fly effectively, thus bringing about a saving of trout through this sporting fishing method, the new stream improvement project ranks as a major step in the drive for better fishing.

Spring Creek is now open to the public, and each licensed fisherman is permitted five fishing trips during the season. The limit for each trip is two trout, and the Board suggests that all fish under 10 inches in length be carefully returned to the water. Artificial lures with barbless hooks must be used, and these devices proved very effective on opening day. Every fisherman must be checked out by 8 P.M. eastern standard time.

Of interest to fishermen should be the fact that trout already released from the Spring Creek rearing ponds and those now on the

property represent in value the entire cost of the development, which was carried out solely on the Fishermen's License Fund.

It is the hope of the Board that this site will serve as a model for sportsmen who plan independent stream improvement campaigns for other sections of the state.

Attend Banquet

On Friday evening, over 200 enthusiastic fishermen attended the Third Annual Fisherman's Dinner of the Federation of Sportsmen's Clubs of Centre county, held at State College. Splendid addresses were made by Seth Gordon, Adolph Muller, Charles E. Jackson, and Carl D. Shoemaker. Grover C. Ladner in a forceful address roundly condemned pollution of fishing waters.

Commissioner of Fisheries Oliver M. Deibler presided at the dinner, which provided an ideal closing scene for this eventful day in Pennsylvania fishing.

Through the courtesy of Charles H. Goepel, treasurer of the Philadelphia Chapter of the Izaak Walton League, moving pictures of exceptional interest to the assembled fishermen were shown as a final feature for the program.

WATERSNAKE FACTS

Paul L. Swanson of Polk has made an intensive study of reptile life native to Pennsylvania. He makes the following interesting comments concerning that arch enemy of fish life, the watersnake.

"While fishing for bullheads at Montgomery's Dam in Mercer County last July, I captured a watersnake. The snake had a very conspicuous bulge and I decided to take it home and examine its stomach. As is often the case with snakes that have recently eaten, and are shaken up somewhat by being caught, it regurgitated its prey the next morning, saving me the job of dissecting. Much to my surprise its recent meal consisted of a large bullhead which measured 9¼ inches in length. The snake itself was 37½ inches long. Digestive action had started on the forepart of the bullhead, which was swallowed head first. The horns were in good shape and perfectly normal.

The snake was fortunate in disgorging his victim that the horns adhered to the side of the fish. This snake is still alive in my collection.



Seth Says

I figger there's a heap o' fun in goin' fishin' fer catfish. Now then, jest the other day, we hed a right smart rain, and the crick soon was muddy as a claybank.

So I digs a good bunch o' worms, grabs the cane pole an' starts fer the crick. Down at the rock hole, the banks was so slippy thet I hed to be right careful about pickin' a place to fish.

Well, sir, I'd jest plunked the bait into the crick, an' set back fer a couple minutes, when the cork starts a-bobbin'. When it dips under the water an' starts movin' off, I pulled, an' by gosh I hooked inter the nicest catfish in a long time. He'd a-went sixteen inches anyways. After thet, I caught two more big catties, an' was beginnin' ter figger they'd quit takin' the bait when off starts the cork agin. This time, I hooks inter some-thin' thet made me know right off it wasn't no catfish. I rasseled around with the critter fer mebbe two minutes, an' then out comes a whoppin' big eel, thick as a man's arm. The eel an' them catties made a right nice mess o' fish.

Some folks don't take none too kindly t' eels or catties on account o' them bein' hard to clean. Ain't no reason fer feelin' thet way about 'em, I reckon. Jest take a pair o' dry canvas gloves, cut the skin below the eel's head, an' it can be off in a jiffy. Sam Jenners drives a nail through the head o' the eel afore he yanks off the skin.

An' say mebbe eels an' catties cooked brown in flour er cracker dust don't make a feller eat hearty. I reckon anybuddy who ain't fished fer 'em an' eaten 'em hes missed a lot.

DELAWARE COUNTY SPORTSMEN STAGE CONSERVATION DRIVE

An aggressive campaign for conservation of fish and promotion of good sportsmanship is being carried on in Delaware County by the Delaware County Chapter of the Izaak Walton League. Results attained so far are most encouraging in this splendid effort of the chapter to provide better hunting and fishing in the future for everyone. Two of the key men in the campaign are A. R. Cochran of Chester and William Bickel, Treasurer of Delaware County. Following is a message to sportsmen from the chapter. One of the signs being used to promote the conservation cause accompanies this article.

FISHERMAN! BE A SPORTSMAN! CONSERVE THE FISHING!

Don't kill more than 7 Trout per day
Fishing allowed by courtesy of
property owner

DON'T ABUSE THE PRIVILEGE!
Stream stocked by State through
DELAWARE COUNTY CHAPTER
IZAAK® WALTON LEAGUE

ATTENTION FISHERMAN!

Delaware County is situated in one of the most densely populated sections of Pennsylvania. If every fisherman took from the streams of our County the legal limit of game fish per day, as shown on your copy of the Laws of the State, the supply of fish would soon be exhausted. In an effort to insure enough fish to go around, as well as to conserve the supply for future years, the Delaware County Chapter of the Izaak Walton League, thru which during the past years much of the stocking of the streams was done, requests that you limit your kill greatly. For instance, in the case of trout to not more than 7 daily, and bass 5.

BE A SPORTSMAN and think of those to come after you. The Izaak Walton League is a conservation organization, which is, among other things, attempting to provide good hunting and fishing. WILL YOU COOPERATE?

Remember the rights of the owner of the property on which you are fishing. If you break down trees and shrubbery, leave the gate open, litter his property with rubbish and do other damage, he will post his property against trespassing, and all of us will suffer for the faults of a few. Therefore, treat his property as though it were your own and everyone will profit.

DELAWARE COUNTY CHAPTER OF
THE IZAAK WALTON LEAGUE.

When fishing on a hot day, it is usually advisable to gut a fish within a short time after it has been taken from the water.

Some mighty fine black bass have been taken on grasshoppers. The yellow bodied kind ranks as a first rate live bait.

If you locate a large number of rock bass about an old stump or log, helgramites make effective bait for them.

THREE AT A TIME

Three calico bass, of exactly the same size, were taken simultaneously by William Troster, Kingston angler, while fishing on the North Branch of the Susquehanna River, near Meshoppen. The fact that calico bass are rarely caught in this section of the river makes the catch still more unusual, according to Warden Russell J. Womelsdorf, who reported the catch.

Troster was fishing from a boat, using two rods, and two lines, with two hooks attached to each line when he made the catch. The calico bass struck at the same time on minnows that he was using for bait. They were identical in size, each measuring 11 inches.

The Kingston angler also caught a 22-inch salamander on the same day. The waterdog was retained alive, and later presented to the Kingston High School, where it was placed on exhibition.

CONSERVATION FIRST

One of the finest examples of good sportsmanship reported this year is that set by C. S. Hershey of Altoona. According to Warden Russell Womelsdorf, while fishing on Huntingdon Creek on opening day, Hershey caught sixteen trout above legal six inch size. He returned all but four of the catch to the water. The fish retained averaged about 12 inches in length.

Good fishing on the Luzerne county stream was general. Bobby Holmes, 11 years old, of Huntingdon Mills was one of the proudest boys in the county when he landed a 16½ inch brown trout. A group of 11 fishermen interviewed had taken a total catch of 120 brook trout and brown trout.

If a pickerel strikes live bait, give it plenty of time. Generally, the best time to pull is when it starts moving steadily away.

A CATFISH PROBLEM

What would you do if, while sucker fishing, the bullhead catfish, and by that we mean big bullheads, insisted on taking the bait and being caught in the face of the fact that you hated handling the critters? That, in brief, was the predicament of Russell Stoner, Reading, and Earl Wolf, Shillington, while fishing at Slope Wall on the Tulpehocken Creek, Berks County. Their catch comprised a number of unusually large bullheads, averaging 17 inches in length and about three pounds in weight.

As both anglers had no liking for handling the catfish, they disposed of the problem by cutting the snell of the hook and dropping the fish into a bag, according to Warden Bill Wounderly. A number of the bullheads had swallowed the hook.

When they left Slope Wall, they were two proud fishermen in spite of the difficulty experienced. Wounderly says that he has not been able to find out who cleaned the catfish.

A FATAL "RESCUE"

Casting should be limited to game fish, and certainly woodchucks should be excluded from the picture, according to H. P. Shawkey, of Warren.

Shawkey was casting for bass on the Allegheny River. While retrieving his cast, he saw a baby ground hog swimming the stream, and thought that a helping hand might save the little fellow from drowning. Accordingly, the next cast landed squarely in front of the amateur swimmer.

In an incredibly short time, the woodchuck became so entangled in hook and line that it was drowned before Shawkey could release it.



LEFT TO RIGHT—A BROOK TROUT, A RAINBOW, AND TWO BROWNIES

Meet a Peerless Fighter— THE BLACK BASS

GAME fish to the core, fighting fish that yield to angling skill only after a battle that saps most of their savage vitality—black bass, smallmouth and largemouth, rank as favorites with thousands of Pennsylvania fishermen.

No finer tribute may be offered a game fish than that expressed by the late Dr. James A. Henshall, author of the "Book of the Black Bass."

"The black bass," he wrote, "is eminently an American fish; he has the faculty of asserting himself and making himself completely at home wherever placed. He is plucky, game, brave and unyielding to the last when hooked. He has the arrowy rush of the trout, the untiring strength and bold leap of the salmon, while he has a system of fighting tactics peculiarly his own. He will rise to the artificial fly as readily as the salmon or the brook trout, under the same conditions; and will take the live minnow or other live bait, under any and all circumstances favorable to the taking of any other fish. I consider him, *inch for inch*

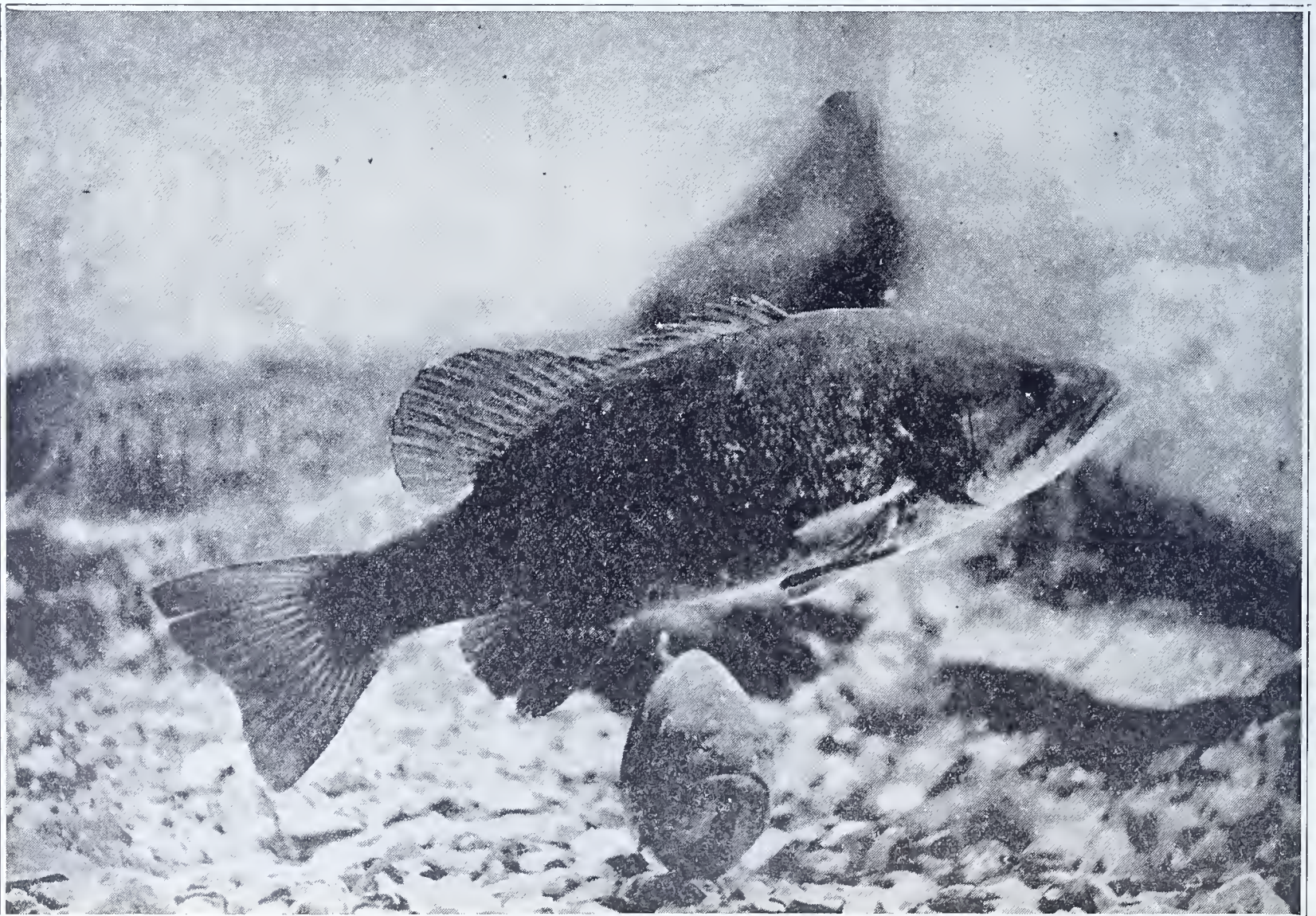
and *pound for pound*, the gamest fish that swims."

There is in the dynamic strike of a bass a thrill second to none in angling. It comes generally with a swiftness and violence that are characteristic of this great game fish. In still-fishing, the rod tip swishes violently to the surface of the water, the line is stripped through the guides with such speed that it is frequently difficult to keep pace in drawing sufficient slack from the reel as the first run continues. If the strike comes when a floating lure is in use, a rising bass in shallow water seems almost to make the surface "explode." Few anglers who have known the sensation induced by the strike of a two-pound bass need more than a single experience to make them ardent admirers of this splendid fish.

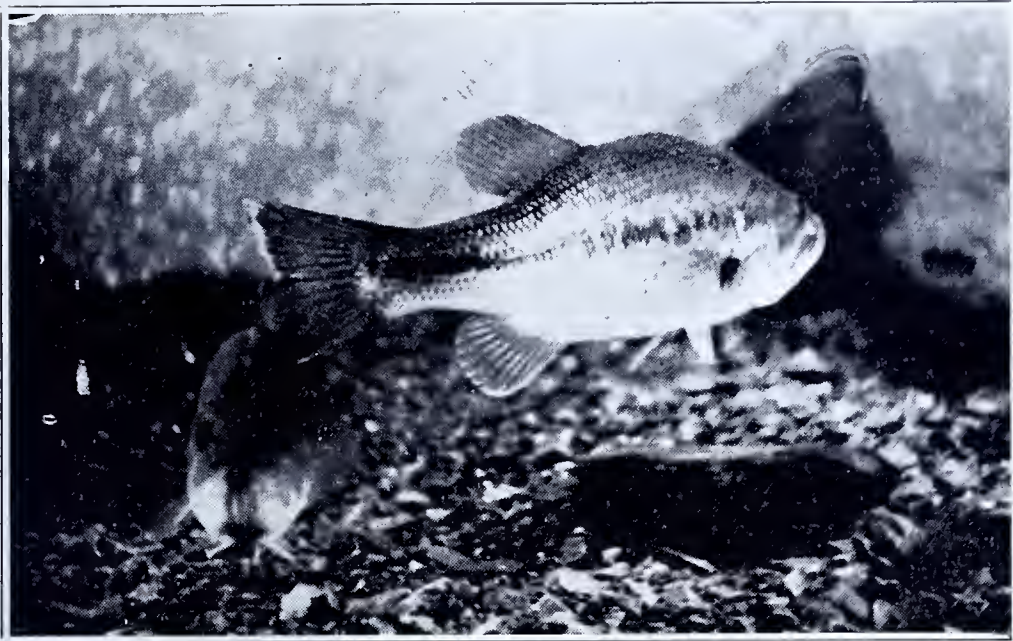
Streams and lakes of Pennsylvania afford fishing for both the smallmouth and largemouth bass, although the range of the latter is somewhat limited. Largemouth bass by preference seek more sluggish bodies of water, having rich aquatic vegetation, while

the gamey smallmouths readily take to faster streams and rock-bottomed lakes. Many of the bass waters of the Keystone State are of the latter type, and the smallmouth is in consequence predominant in our bass areas. It is a noteworthy fact that largemouth bass have been most successfully introduced into artificial bodies of water, for example, Lake Gordon in Bedford county. Both species are frequently taken from the same stream or lake, although at times it has been contended, their range in such an area is not the same.

In order that bass fishing, which has been constantly on the upgrade during the past few years in Pennsylvania, may benefit to the utmost from the stocking program of the Fish Commission, smallmouth and largemouth bass are raised and distributed to suitable waters from the hatchery at Pleasant Mount. It is significant that the rapid improvement in this great sport has been coincident with the Board's policy of stocking fingerling bass, that is, fish well started in growth and therefore fully capable of caring



FIRST OF THE FIGHTING FISH—SMALLMOUTH BASS



THE LARGEMOUTH BASS

for themselves when released in suitable waters. Success in raising the daphnia or water flea as food for baby bass undoubtedly has been a vital factor in the bass propagation program. An entire unit at the Pleasant Mount hatchery, consisting of 110 ponds, is devoted to daphnia culture.

The Smallmouth Bass

Owing to its wider range in Pennsylvania, the smallmouth bass is more extensively propagated and stocked than is its cousin, the largemouth. Some of the greatest smallmouth bass waters on the eastern seaboard, the North Branch of the Susquehanna River, the upper Delaware River, Juniata River, upper Allegheny River, French Creek, and the Conodoguinet Creek, attract anglers of the Commonwealth when the bass season opens on July 1. Generally recognized as the gamest of the basses, it is taken on either live bait or artificial lures. Whether or not the readiness with which it strikes artificial lures is induced by aggressiveness alone is a matter of conjecture. The following characteristics of smallmouth bass held at the hatchery lend strength to a belief that curiosity is a real contributing factor. In this respect, the smallmouth might well be compared to the inquisitive white tail deer, the most important big game animal in Pennsylvania covers. It is generally acknowledged that many of the artificial lures upon which bass are taken bear little if any resemblance to creatures living within their range. Curiosity undoubtedly prompts the smallmouth to investigate anything unusual within its range of vision. If that object arouses its pugnacious instinct, the strike follows with customary violence.

When a strange object appears in a body of water, the more timid fishes dart away to safety. Heading the category of shy game species is the brook trout. The bass reacts otherwise. Upon being momentarily startled, it swims for a short distance and then turns, watching the object closely.

Later, its tendency is to approach slowly, an approach somewhat reminiscent of the slow and cunning stalking attitude of a curious deer. Even baby bass in their early feeding stages are endowed with this inquisitive instinct. It is not uncommon in the bass pools at the hatchery to see one hundred or more of the young smallmouths trailing the end of a rope, or some other alien object, through the water.

Recently, while conducting certain laboratory tests at the Pleasant Mount hatchery, it was necessary to confine this species of fish in a large galvanized circular tank with round glass port holes. When yellow perch, brook trout, or brown trout were being retained in the tank, they quickly darted to the darker portions at the approach of an attendant. The smallmouth bass acted adversely under similar conditions. When an attendant passed his hand to and fro over

the glass partitions of the port hole, they at first retreated a short distance, then turned and cautiously approached the opening to investigate.

Frequently in fishing live bait, particularly the stone catfish, the inquisitive instinct of smallmouth bass living in a wild state is revealed. At the approach of a ranging smallmouth, the catfish often will "play dead." Moving to within possibly six inches of this natural prey, the bass hovers near it for a time, its pectoral fins gently fanning the water. As it backs away, the catfish may move slightly, and instantly is seized by the smallmouth. Essentially, both species of bass are killers, taking, unless driven to extremes by hunger, live moving food.

Spawning time for the smallmouth bass comes in Pennsylvania in late May or early June, dependent to a large extent upon existing water temperatures. The male bass prepares the nest in fairly shallow water, cleaning off a small patch of gravel or pebbles, frequently on the lee side of a log or rock, for the eggs. These eggs are adhesive by nature, clinging to the bed of the nest when deposited. After the nest has been prepared, the female is enticed to the spot, and spawning completed, leaves guardianship of the nest and young fish to the male. Bass nests vary from eighteen inches in diameter to three feet.

In feeding, bass of both species may be termed extremely temperamental fish. Minnows are a basic food supply for them and are highly essential for successful stocking of these voracious fish. Other live food covers a wide variety, consisting of organisms living on the bed of stream or lake, insect life, and the young of other species of fishes.

A glance at the pictures of smallmouth and largemouth bass accompanying this article reveals basic differences in appearance of the two species. The following characteristics serve to distinguish them. The corner of the mouth of the smallmouth bass usually terminates under the front angle of the eye; that of the largemouth under or slightly beyond the rear angle of the eye. Eleven



YOUNG SMALLMOUTH BASS

rows of scales are present on the cheek of the largemouth bass, seventeen rows of scales on the cheek of the smallmouth. A distinct black lateral band is to be observed in younger specimens of the largemouth bass; this band tends to become somewhat less distinct in older specimens.

While smallmouth bass exceeding five pounds in weight have been taken from Pennsylvania waters, this weight is rare. An average weight for mature specimens is approximately two pounds. To a large extent, the weight of bass is governed by availability of food in their range. A smallmouth bass of sixteen inches taken from a stream in which food is abundant may weigh from two and one-half to three pounds. The writer has weighed two smallmouth bass taken from Tuscarora Creek in Juniata county that serve to illustrate this fact. One of the bass, 15 inches in length, weighed one ounce over two pounds; the other, 16 inches, weighed two pounds, nine ounces. Both were heavy in girth and extremely uniform from the weight angle. The live food supply in Tuscarora Creek, by the way, is unusually abundant.

The Largemouth Bass

Fishing for largemouth bass in certain waters of Pennsylvania is exceptional. Outstanding in this respect are Lake Wallenpaupack in Pike and Wayne counties, and Lake Gordon in Bedford county. Both lakes are artificial bodies of water and afford an abundance of live food for bass and other game fish. While smallmouth bass are also taken occasionally in Wallenpaupack, they are rarely, if ever, reported from Gordon. Other lakes and ponds also yield excellent largemouth bass fishing. Conclusive proof of this fact is offered by the record largemouth bass caught last year in Pennsylvania. Fishing in Lehman Lake, Pike county, William Schoonover topped the season catch with a largemouth weighing 8¼ pounds. Stillwater Lake, in the Poconos, Monroe county, yielded an exceptionally fine largemouth to the angling skill of William D. Burk, Philadelphia angler, and a director of the Southeastern Division, Pennsylvania Federation of Sportsmen's Clubs. His catch weighed 6¼ pounds.

Largemouth bass fishing is not limited to lakes and ponds of the state, however. Excellent catches were made in the Holtwood, Conowingo, and Safe Harbor dams on the lower Susquehanna River last season. In the western counties, Conneaut Lake produced good fishing, as did waters of Lake Erie off the Pennsylvania shoreline.

It is a noteworthy fact that many outstanding largemouth bass caught last year were taken on artificial baits. In pugnacity, the largemouth bass does not bow to its cousin, the smallmouth. It strikes a plug or floating lure with vim and energy characteristic of the black basses, and the ensuing battle merits whole-hearted admiration from the angler.

In spawning, the largemouth bass generally seeks small coves of aquatic vegetation where the nest is prepared. Somewhat the same procedure is followed as in the case of the smallmouth, the male bass later guarding nest and young fish. Its spawning time in Pennsylvania is coincident with that of the smallmouth bass. The largemouth usually does well in more sluggish waters of mud or silt bottom in which an abundance

of natural food is available in the dense aquatic vegetation. However, waters of this type are not essential. Lake Gordon, having many rock shallows, has been particularly adaptable for this species. This cool water lake has yielded extremely heavy fish. A largemouth taken last year measured 17 inches in length and tipped the scales at slightly over three pounds in weight. One of the most important sources of forage in the lake is an abundance of crawfish.

Opening of the season for largemouth and smallmouth bass in Pennsylvania waters marks a climax to the fisherman's year. When water conditions are favorable, that is clear and at normal or slightly above normal levels, thousands of anglers invade our great bass streams. The sport they seek, from the angle of thrill-producing, is second to none, and fortunate is the angler who happens on a good stream when the black bass are on a striking rampage. Of our inland water game fishes, they deservedly hold first rank in the Keystone State.

FLIES SCORE AGAIN

The water's too high and roily. It's too cold. No use using flies today. A general consensus of opinion with thousands of ardent Pennsylvania trout fishermen on opening day, and, in fact during the first week of the season, might be summed up in the foregoing expressions. Certainly, it was agreed that the fly fisherman was not given much of a break by the weatherman.

But then, just to show you that no fast rules can govern fishing, along comes Myron Shoemaker of Laeeyville, and explodes the theory right under our noses. Myron reports that on Wednesday, April 18, he spent just a short time on Millstone Creek, Bradford county. Sixteen nice brook trout were taken on the DRY FLY. Pattern? A blue quill.

TO SAVE YOUR RELIGION

Here is a good hint from Dr. Harvey Reese, Memphis, Tenn., to help you keep from losing your religion—if any—when dry fly fishing. Instead of sticking spare fly-hooks in your hatband, supply yourself with small safety pins and put one through the eye of your hook and then pin it through your hatband, with the hook hanging free. It will save a lot of valuable time, as well as temper and hatbands.

Bass waters of Westmoreland County last year provided excellent largemouth bass fishing, according to Warden Sam Henderson of Greensburg. One of the outstanding bass reported was taken by Earl Miller, of Mount Pleasant. Miller's catch measured 25½ inches in length, but no weight was given.

It's always best to have an extra rod on that fishing trip.

It's a well-known fact that fishermen as a rule are pretty good citizens.

LAKE ERIE PROVIDES FINE BASS FISHING



"UNCLE DAN" S. C. H. N. A. B. E. L.
BOARD MEMBER, WITH CATCH
OF LAKE ERIE BASS AND PIKE

Anglers in western and northwestern Pennsylvania need not long for the saltwater fishing of the Atlantic coast. There is open for them, off a Pennsylvania shoreline of 48 miles on Lake Erie, some of the finest sport in the east, angling for battling smallmouth bass, largemouth bass, wall-eyed pike, pickerel, lake trout, and even those fighting demons of the fresh water muskellunge. And accommodations, too. Guides, motorboats, rowboats, bait and rooming facilities are available. In brief, for the fresh water fisherman, Lake Erie ranks as a first-rate bet. For bass fishermen who like to fish large bodies of water, it ranks with the best.

The forty-eight miles of Pennsylvania shore line on Lake Erie is paralleled by magnificent highways. At frequent intervals along this beautiful drive, backed by the vineyard gardens of the state, are to be found boat liveries which afford camping facilities, fishing tackle, and boats of different types for recreative purposes. Live bait is also on sale at most of these places.

One great asset in enjoying Lake Erie fishing is that it is so diversified. The entire family can get some pleasure out of it. Those who do not care to pit their skill against the bass or pike perch can while away their time angling for the sunfish, yellow perch, or the catfish. Again, if there are any in the party who do not care to

fish, the beach affords wonderful bathing facilities. The element of danger, insofar as the vastness of this body of water is concerned, is not any greater than would be the case in fishing on Lake Wallenpaupack or other large bodies of water. The angling is generally within a short distance of the shore giving anyone time to reach land safely before the approach of a storm. The open season for bass and other game fish is from May 30 to October 31, both dates inclusive. Daily creel limits are black bass, both species, 12; glass pike, 12; muskellunge, 12; rock bass, 25; crappie, 25, and strawberry or calico bass, 25.

The city of Erie is located nearly midway along Pennsylvania's Lake Erie shoreline. Adjacent to the city is the famous Erie Bay. This protected area affords fine angling for those who do not care to fish in the more open portions of the lake. The only drawback to the bay fishing is that it is within sight and sound of the city which does not appeal to fishermen liking wild waters.

The northern section of the bay, reached over Route 90, north, out of the City of Erie, is the state park known as Presque Isle Peninsula. This peninsula forms the northern portion of the Bay of Erie and the peninsula itself has been set aside as a State Park. It is intersected by beautiful concrete drives and affords bathing beaches and other recreational facilities. In addition to this, the state has conserved the wild fauna of the territory in this area.

As the Board of Fish Commissioner's share towards the preservation of this wild life, pools and spawning beds were dredged paralleling the peninsula for the natural propagation of fishes and as a refuge for wild water fowl. Nature lovers can find, on this spot, nearly within the city of Erie, almost all kinds of aquatic and terrestrial life native to that section of the state.

Always dry your leaders before putting them in the fly box.

LEHIGH SPORTSMEN PLAN BIG OUTING

July 28 at Dorney Park near Allentown will be a banner day for sportsmen in Lehigh county and southeastern Pennsylvania, according to word received from George Zimmerman, secretary of the Lehigh County Fish and Game Protective Association. On that day, a varied program has been planned for those who enjoy fishing, hunting and other outdoor sports. The program arranged will appeal to the entire family, and already keen interest is being taken in the event.

The field day and picnic will be featured by the following activities: fly and plug casting, skeet shooting matches, pistol matches, trapshooting, sports for women and children, and a balloon shooting contest. Competing pistol teams will vie for honors, and Lieutenant Bair, of the State Highway Patrol, one of the outstanding pistol experts of the country, will be on hand to give pointers. Fast, gamey trout will be the reward of anglers engaging in fly fishing the lake at Dorney Park. A fine game exhibit is also planned.

Sportsmen in eastern Pennsylvania are cordially invited to attend.

KILLS 138 WATERSNAKES

Killing watersnakes is an important feature in the drive for better fishing. The following interesting letter from Special Warden Samuel Lewis of the Porter Lake Hunting and Fishing Club contains some good pointers on thinning down the number of these reptiles. He writes:

"After having read in last month's PENNSYLVANIA ANGLER about one of your Special Fish Wardens killing 75 watersnakes I thought you might be interested in my experience with the same kind of snakes up here at Porters Lake in Pike County.

"Starting on or about the first of July, 1933, up until cool weather set in, I killed 138 watersnakes. My method of killing them is with a 6-inch barrel .38 calibre official police revolver, bored for .22 calibre ammunition. I first started this as a pastime and practice but now I have made it part of my work as I have discovered that the watersnake eats a lot of fish and will completely destroy a nest of spawn.

"I dissected all but four of the snakes I killed and if every fisherman would realize that every watersnake he misses getting means a lot less fish for him and his fellow fishermen, he would try his best to kill them.

"It was in the fiftieth snake I killed that I noticed it looked unusually fat, so as I always carry a few safety razor blades in my pocket, I decided to open this one and to my surprise I found two catfish and a perch in its stomach. Fifty per cent of the snakes I shot and opened had from one to seven fish and also spawn in their stomachs. The fish I found were small bass, catfish, sunfish, perch and shiners.

"One I killed was swimming along holding a small sunfish up out of the water until the fish would become exhausted, then, I suppose, it would swim to shore and swallow

it. But this did not happen as after I shot it I found two shiners and one 9½ inch perch in its stomach. The sunfish swam away apparently unhurt.

"August is a good month to kill them as the female is then full of young. Forty-two females that I killed had young. Each one contained from eleven to thirty young snakes still in a partially developed stage.

"One female I killed measured 47½ inches in length and it took me almost three weeks to get her as she would always disappear at the slightest sound but this day I had a good strong warm wind blowing and I managed to work up to within about twenty yards of her. Easing my revolver out I let her have two shots one in the neck and one in the head. After I opened her I found two catfish, one 6½ inches and the other 8¼ inches and 30 young unborn snakes and signs of more but not developed enough to count them.

"This summer I hope that I will be able to double the number of snakes I killed last summer and I hope that some of the other wardens that go after the watersnakes will have good luck in getting them."

Ten lively minnows or stone catfish should be sufficient bait for any fisherman in a day's fishing. To crowd too many into a live bucket weakens them, making them less effective, and may result in total loss.

CHARTER GRANTED

Word has been received from P. C. Urchak, secretary of the Rox Bottom Hunting and Fishing Club of McKees Rocks, that a charter has been granted to this active sportsman's association. The club maintains a camp located on the North Branch of Little Kettle Creek at Carter Camp.



SHIPPING BUILDING AT PLEASANT MOUNT

FLY FISHING FOR BASS



Posed by Myron Shoemaker

1. Rod has been raised to retrieving position and line can be noted as retrieving of lure has started. 2. Lure has been retrieved, coil of line is held in left hand and rod has been raised to blend into the power stroke for the pickup and backcast. 3. Rod in perpendicular position although a little too far forward. Note that the coil of line is still held in the left hand. 4. Forward cast is nearly completed with the coil of line shooting through the guides and the rod falling to the horizontal. As soon as lure sinks to sufficient depth then rod should be raised to position as shown in Position 1.

FLY fishing for bass rivals in many respects the fine art of fishing a fly for trout in mountain and meadow streams. Rising readily to floating lure and striking fly and spinner with all the aggressiveness that has endeared it to thousands of Pennsylvania anglers, the smallmouth bass offers sport supreme to fly fishermen. There are those who contend that it is superior in fighting tactics to the brook trout when taken on a fly rod, and at least an equal to that slashing type of fighter of our trout waters, the brown trout.

While the art of fly fishing dates back centuries, bass fishing with floating fly or fly and spinner has only come to the fore in recent years. Not only is this type of sport satisfying from the angle of action and skill, but it offers a real opportunity to conserve bass under legal size. A bass of one pound weight taken on a light fly rod is capable of a magnificent fight, supplying far more thrills than if caught on heavier rod and tackle.

Myron Shoemaker, enforcement officer at Laceyville on the famous North Branch of the Susquehanna River, offers additional weighty arguments for the use of flies for bass. An ardent fly fisherman, he is expert in the use of the feathered lures, and bases his views on experience.

"From a conservation angle," he writes, "live minnows and other bait fish will be saved and left in the streams as a valuable food supply for game fish; there will be a saving of time and expense to the fisher-

man in locating and purchasing live bait, and better fishing if the fly fisherman gives whole-hearted support to this method by which he may save many undersize bass."

Undoubtedly, many fishermen would eagerly turn to fly fishing today if the thought did not persist that it is a difficult art to acquire. This belief, based as it is on the principle that they lack sufficient knowledge of the fine points of the game and equipment necessary, plus a "great secret" that only certain individuals know and guard jealously, is without foundation. It would be unfair to say that fly fishermen as a group are secretive with their knowledge, for they must realize that an ever-increasing number of fly-fishermen on trout and bass waters will help materially in preserving their sport and the sport of future generations. The average fly fisherman may well take a few minutes of his time astream to give a beginner in the art a few pointers without injuring his own sport. In so doing, he is following the finest traditions of fishing, a sport that develops comradeship of man to man without equal.

Fly fishing raises countless discussions, and, unfortunately, the various theories advanced tend to confuse the beginner. Shoemaker suggests and rightly that a fisherman need only catch a few fish on flies to become a confirmed disciple of the sport. Just as in every form of angling, individuals differ in their theories regarding the most successful practice in fly casting. Each fisherman has a system very much his own. While it may work ideally for him, another may

rely on a different procedure. Here are just a few of the issues that may be involved: A large fly or a small fly, a dark fly or a light fly, the highly colored fly or the streamer fly, dry flies and wet flies, regardless of size and color, fan wing flies, and finally, flies and spinners, with some fishermen demanding different sizes, types and shapes of spinners. Boiling it all down, regardless of size, color, type and other features of flies and spinners or other fly rod lures, fish are caught on all of them to some extent. Just as long as there are fish to catch, the manufacturer will have a great assortment of fly fishing lures for the market. It is not necessary for the average fisherman to have a wide variety to insure a catch. In spite of theories involved, one thing cannot be disputed. The use of smaller flies, spinners and floating lures is much easier on the rod and other equipment, and will catch just as many fish and just as big fish. It is not always the size of the hook that fails to hold large fish, but in many cases the fault of the fisherman himself.

Concerning a Theory

Shoemaker takes the "light fly on a dark day, dark fly on a light day" theory and by an interesting process backs his argument that it doesn't mean so much when it comes to strikes from bass and other game fish. He writes:

"There is another theory and practice of many fly fishermen which is strictly followed at all times, the use of a light fly on a dark

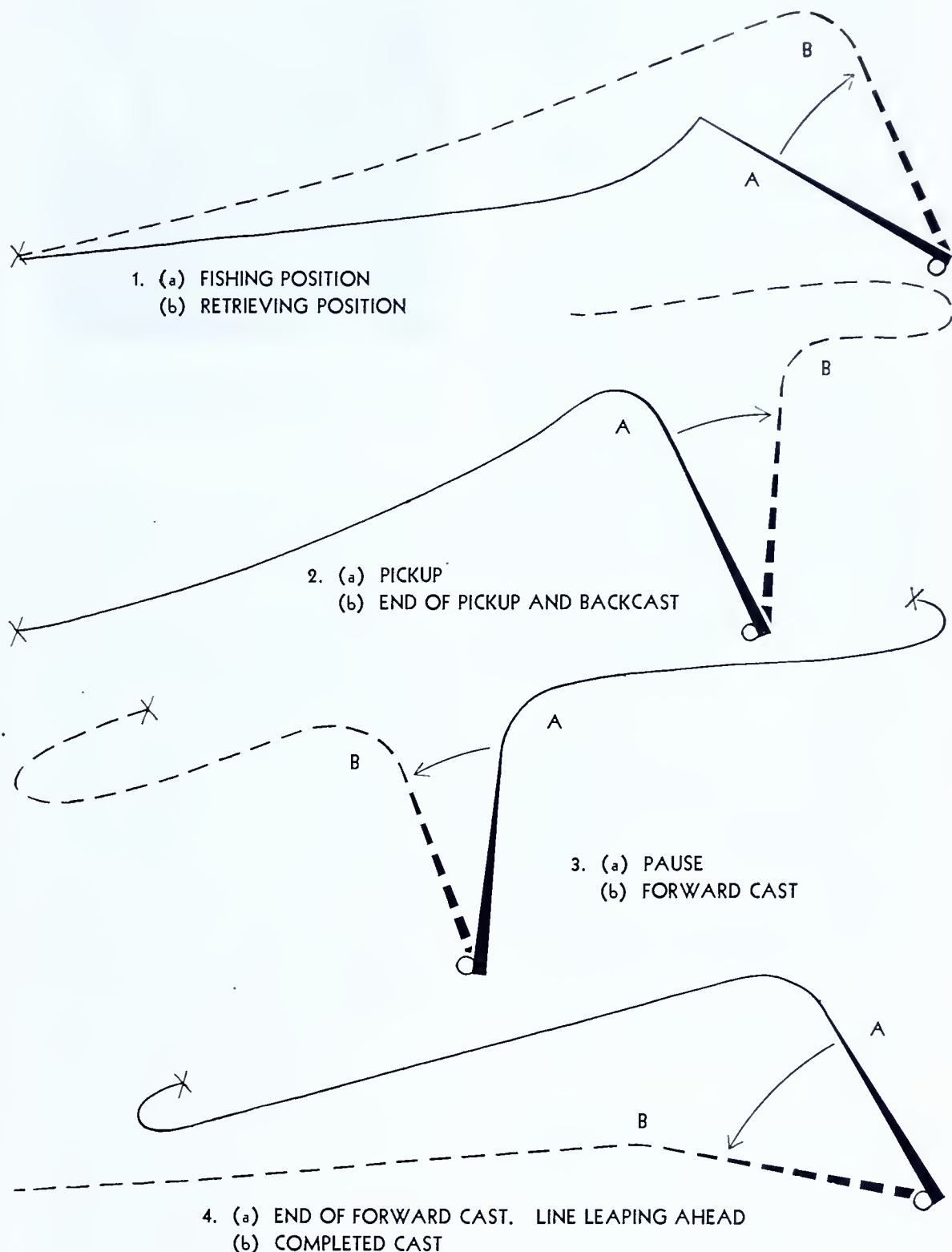
day and a dark fly on a light day. First of all, let us consider the natural color of live baits. It is a well established fact that the stone catfish is one of the most popular live baits for bass. The helgramite, sometimes called clipper, dobson, and jack, is also popular. One glance at the stone catfish or helgramite immediately convinces the fisherman beyond doubt that both are dark colored. Minnows and crawfish are also widely used, and they tend to lighter colors. Does the bait fisherman give any thought as to dark bait on a light day and light bait on a dark day? He fishes with stone catfish or helgramites on dark and dreary days and catches fish, and he fishes with minnows and crawfish on the brightest days and catches fish. He usually goes out with at least two different kinds of live bait and is gambling that the fish will strike the kind of bait he has. He has given no thought as to color or variety of sizes or numerous types. Why? Because he has confidence in live baits which have been popular for years without any great discussions to take away his confidence from them.

"Actual experience and personal knowledge of other fly fishermen has proved beyond any doubt that the selection of flies for dark and light days is one of individual taste and imagination. For example, there is the personal knowledge of one fly fisherman who uses nothing but a white fly whether fishing at day or night. Another fisherman uses nothing but a Montreal whether at day or night. A Cahill is favored by another, who fishes from Maine to Florida. All are successful.

"The Reuben Wood has been mentioned as a good fly for bass. This fly is of the light variety. The Lord Baltimore also is excellent. It is practically all black except the body. The writer has used them successfully as have many other fly fishermen. They are extremes in color. I have mentioned the Reuben Wood for a specific purpose, not that it is any better than any other fly or will catch more fish but because it was used exclusively over a long period most successfully. It was used for bass in all kinds of weather imaginable and at all times of day and night. Fish taken were well worth the efforts of any fisherman, a number of them ranging in weight from two to three and one-half pounds each. Fish were taken every day without exception. Covering this same period, another fly fisherman was using flies of various colors and yet failed to make better or more consistent catches."

Casting Suggestions

Practically the same fundamental rules are followed in fishing fly and spinner, wet fly, dry fly or surface lures for bass as those adopted in fishing similar lures for trout. The lures are generally larger and a little heavier for bass fishing under most conditions, requiring rod and line of slightly heavier weight. Due to heavier lures being used, more power is needed for the pickup and backcast as well as for the forward cast, while a little more time is necessary for the pause. The heavier rod will take care of the needed power. False casts used a great deal in trout fishing are not generally employed in fly fishing for bass. Bass streams as a rule are larger waters, hence



1. (a) Normal position of rod and line after fly and spinner have hit water and have started to sink.

(b) Position of rod when retrieving lure with line with the assistance of the left hand. Line is held in coil with left hand. Rod should remain in this position until just preceding the pickup and backcast.

2. (a) Pickup and backcast are one smooth motion with the power stroke of rod ceasing just before rod reaches position (b) where it should be stopped for line to flow backward.

3. (a) Pause Position. Rod in same position as in 2(b) and must remain so momentarily until slight tug is felt when forward cast must be started.

(b) Forward cast with power stroke ceasing at point indicated.

4. (a) At end of forward cast the power stroke has been completed, the line is straightening out and the lure will automatically leap forward depositing the leader and lure on the water.

(b) The rod simply follows through from position (a) to position (b) indicated and just slightly above the horizontal position. The loop of line held in the left hand should be released to flow through the guides just before the rod reaches the horizontal position.

practically all casting is done by the overhead cast. This cast is used in practically all fly fishing and should be learned before attempting to acquire other forms of casting.

Fly and spinner may be fished across the current or against the current, as should the wet fly. Sometimes a slight pause of the fly and spinner while retrieving it will result in a strike when it again starts to move. The wet fly should be allowed to float naturally with the current until time to retrieve it. In fishing dry fly or floating lures, they should be permitted to float naturally with the current and should be fished either across the current or upstream. Frequently, as the floating lure rides the surface, a slight flick of the rod will move the lure a trifle to give it a live motion, and a strike may be immediately forthcoming. On smooth water, the floating lure should be left motionless for a moment after the cast, and then by a slight flick of the rod moved two or three inches, repeating the maneuver several times until a strike has been induced or until the fisherman is ready for the pickup and backcast. With some of the surface lures it will be noticed that there is a little more wind or air resistance due to size and make-up, but not enough to hamper even a beginner. All that is needed is the application of a trifle more power in casting.

In fishing wet fly or fly and spinner, immediately after the cast it will start to sink, and retrieving of the lure may be instantly started or it may be permitted to sink to the depth which the angler desires. Occasionally a bass will strike a sinking lure quicker than when it is in a retrieving motion. This is due to the lure sinking naturally, making it most desirable to the fish at that time. Again, a retrieving motion may attract the attention of the bass and result in a strike because the action is unnatural. In either event, the rod should be raised to a position (see position 1A in illustration accompanying this article) so that it will be ready for instant action in case of an immediate strike.

As soon as retrieving of the lure starts the rod should be raised slowly to position 1B (see illustration) and remain there while the lure is being retrieved with the line by the assistance of the left hand. The line meanwhile is being held in a coil until the forward cast is again nearly completed. Do not hurry retrieving of the lure except at the instant before it leaves the water for the pickup and backcast. Then it is automatically speeded up, due to the pickup and power stroke which lifts the lure and line from the water and starts it on its backward flight.

When a bass strikes the fly it is not necessary to use excessive power with the rod to hook it. The line is tight enough while retrieving the lure and there is sufficient resistance in the opposite direction by a striking fish to sink the hook deep enough to hold it. If additional power is necessary, enough can be supplied by a mere flick of the rod, and this procedure should hook a bass of almost any size. Application of excessive power is not only hard on the rod, but in the event of a strike from a heavy fish may break it.

With the rod in position as in illustration



SONS OF MYRON SHOEMAKER
WITH CATCH OF NORTH BRANCH
SMALLMOUTHS

1B and the retrieving of the lure nearly completed the rod should start to rise slowly for the pickup, and without stopping the motion, should blend into the power stroke for the backcast. This should be done with one smooth graceful motion with the rod stopping abruptly at the perpendicular position as in illustration 2B. With the rod in this position there is a momentary pause as the line flows backward. As it nears the end of its backward flight there will be the feel of a slight tug or pull which is the automatic signal for the forward cast to start. Due to the heavier lures there should be a little more time allowed for the pause so that the line will be well back before starting the forward cast. The pause is very important and if the forward cast is started too quickly or too slowly a faulty cast will be the result. If started too quickly there will be too much of a loop of the line to bring forward and the line will either wrap about the fisherman's neck or drop almost in front of him. If started too slowly, the weight of the lure will cause it to drop at the end of the backcast and the result will be a slap in the back of the head or the lure will be cast high in the air ahead. It is simply a matter of rhythm and proper timing and with a little practice will become practically a matter of reflex action. Turning the head and watching the backward flight of the line may help in securing proper timing until it becomes natural by feeling the tug. It is very important to keep the line well above the head on the backcast as shown in illustration 3A. This allows the line on the forward cast to flow downward to the proper plane as shown in illustration 3B instead of on a parallel plane above the water. If the rod is allowed to go back at an angle beyond the perpendicular position, the line can not be kept at the proper elevation and considerable difficulty will be experienced.

The moment the tug is felt at the end of the backcast the forward cast should start. It is made by a smooth brisk stroke downward as if hitting a tack with a tack-hammer, with the rod supplying the major part of the power. The power stroke on the forward cast lies entirely between rod positions 3A and 3B with the rod falling or following through to the horizontal position as in illustration 4B. There should be sufficient power

to hurl the line forward and carry with it the line, which has been held in a coil in the left hand and released at the proper moment. This should be after the power stroke has been completed and just before the rod reaches the horizontal position. If the coil of line is released too soon it will not flow through the guides as freely as it will when the rod is just above the horizontal position.

The weight of larger lures for bass should not mislead the beginner into thinking that great power is necessary for either the backcast or forward cast. To eliminate some power on the backcast until such time when more line can be easily handled, stripping in more line with the left hand when retrieving the lure and releasing it at the proper time on the forward cast is suggested. This will increase the fishing range in retrieving the lure. Slightly more power will be needed on the forward cast to shoot the line through the guides but it can be accomplished very easily and is used a lot by bass fishermen.

A common fault in many beginners, who have watched the action of the rod in the hands of an experienced fly caster, seems to be to jerk the rod on both the back and forward casts. This not only robs the rod of its full power but is tiresome to the fisherman and is mighty hard on the rod. Both motions should be smooth and graceful and entirely free from any jerk so that the power in the rod can be properly utilized and the line and lure flow forward easily to insure against slapping down on the water.

Equipment

Flies. For the average fisherman, it is not necessary to load up with a wide assortment of flies for bass fishing. For all-round fishing, flies tied on No. 4 eyed hooks are recommended. Ranking as excellent flies are the Lord Baltimore with Jungle Cock Wing, Paramachene Belle and Wickhams Fancy. The Reuben Wood and Cahill have been mentioned before. Many other patterns are also popular, although the patterns referred to offer a good assortment in colors ranging from black to white. From the angle of durability, eyed flies last much longer than those tied on gut. Gut deteriorates and frequently flies tied on it may not be trustworthy if much time elapses before they are used. Eyed flies are easily tied to a leader of single gut, having about a ten-pound test. Suitable gut may be purchased by the coil. The leaders should be from three to six feet in length, or, if preferred, even longer.

Spinners. Frequently, small spinners, either brass or nickel-plated, contribute greatly to the effectiveness of the fly in bass fishing. Because they add but slight weight to the fly, sizes No. 1 or No. 2 spinners are popular. It is not uncommon to find one manufacturer making a No. 2 spinner of the same size or nearly the same size as a No. 1 spinner of another manufacturer.

The Rod. Rods for fishing fly for bass should be from 9 to 9½ feet in length, and from 5 to 6½ ounces in weight, with plenty of backbone to supply the necessary power in casting. If desired, a shorter and lighter rod may be used, but the lures are usually heavier and larger than those used in trout fishing, and place just that much more strain on a light weight rod.

The Line. If tapered lines are used, double tapered HDH or HCH are good. A level line of D size is cheaper and is perfectly suitable for fishing wet fly or fly and spinner for bass. Dry fly fishermen of course prefer and use the double tapered line. Line sizes are extremely important as the line is the thing that is really cast and it must be heavy enough for the rod so that the angler can cast easily and without apparent effort. The fly is merely a passenger that follows the line and leader. A heavy leader is not necessary and it should not be more than four feet in length unless desired. In fishing fly and spinner or wet fly, it is not necessary to grease the line, but if surface lures are used, the line should be greased, thus permitting greater buoyancy.

The Reel. As it is simply a storage place for the line, any light weight reel with a spool large enough to hold the line is all that is necessary. The reel handle should not project far enough to cause difficulty in handling the line.

Mosquito dope—a small bottle of eucalyptus oil; rub a little on face, neck and hands.



KEN CAMPBELL, 6 YEARS OLD, WITH HIS 4 POUND BASS, FROM THE UPPER DELAWARE

I DON'T GO FISHING JUST TO FISH

*I don't go fishing just to fish—
Why, on the bank of lake or stream,
I can sit and ponder, muse, and dream.
I can read if I wish, or even write,
So what care I if the fish don't bite?
I recall the scenes of by-gone days,
The trips I used to take;
I smile—how oddly crude and quaint
The tackle I used to make—
And the waters go by with a gurgling swish.
No, I don't go fishing just to fish.*

*I don't go fishing just to fish—
Why, of a morn in the early spring,
How sweet to hear the robins sing.
Not only them, but all the birds,
Their sweetest songs—no need of words.
Old nature then just rousing up
With a smile of glad surprise
From out her silent winter's sleep
With mild and dreamy eyes.
What more could nature-lover wish?
No, I don't go fishing just to fish.*

*I don't go fishing just to fish—
Why, in the rosy month of June,
Be it early morn or afternoon,
In some soft mossy spot to lie
And gaze far into the bright blue sky;
To watch the lazy white-cap clouds
Afloat in the azure blue,
Or the golden-red of the setting sun,
Or the crescent moon just new.
Ah, Trout indeed, no daintier dish,
But I don't go fishing just to fish.*

*I don't go fishing just to fish—
Why, in the pleasant autumn days,
A pleasure keen to sit and gaze
On the leafy tints of red and gold,
And watch Old Nature's plans unfold.
Not melancholy days are these,
Though fields are brown and sere;
Of all the days the autumn days
Are gladdest of the year—
To outdoor folk who do not wish,
When they go fishing, just to fish.*

*No—I don't go fishing just to fish!
Why, the song of birds, the hum of bees,
The flowers, shrubs, the stately trees,
The cataract's roar, the rippling rills,
The endless plains the eternal hills—
All are mine—so what do I care
How few the fish I bring to creel,
When all of God's best gifts to man,
Are mine—to hear and see and feel!
I pity the man whose only wish,
When he goes fishing, is just to fish.*

WALLACE GALLAHER

Big Catfish

From Frank Brink comes word that big catfish were caught in large numbers from Twin Lakes, Pike County, last autumn. Anglers Dueker and Nevens of Matamoras caught 50 catties in a day's fishing, keeping 30 of them. The fish retained ranged in weight from one and one-half to two pounds. Those released averaged about a pound in weight.

VARIETY IN THIS CATCH

Taking variety and size into consideration, a catch of fish reported from the Warrior Ridge dam on the Frankstown Branch of the Juniata River by Warden Lincoln Lender, Bellwood, just about tops the list. Fishing in the dam one night last April, G. W. McCauley of Bellwood caught a rainbow trout, a carp, and sixteen bullhead catfish. Some of the bullheads tipped the scales at three pounds.

And then, to put a final touch to his unusual catch, McCauley landed an eel measuring 52 inches in length.

1377 ANGLERS FISH AT SPRING CREEK IN FIVE DAYS

Opening of the Spring Creek trout farm and stream improvement project was an outstanding success. Covering a five-day period, from May 25 to May 30, anglers who fished the ideal pools and eddies where the effectiveness of stream improvement has been demonstrated, numbered 1377. A total of 968 brook, brown and rainbow trout were killed, and many fish were returned to the stream by anglers who were fishing for the thrill of strikes and the ensuing battles on light fly rods.

The following interesting facts have been gathered concerning the Spring Creek event: opening day, Friday, May 25; fishermen checking out—361; brook trout killed—49; brown trout killed—163; rainbow trout killed—84; total, fish killed—296; number of counties represented on opening day—37.

Saturday, May 26: fishermen checking out—280; brook trout killed—47; brown trout killed—79; rainbow trout killed—52; total, fish killed—178.

Monday, May 28: fishermen checking out—191; brook trout killed—39; brown trout killed—120; rainbow trout killed—48; total, fish killed—207.

Tuesday, May 29: fishermen checking out—126; brook trout killed—31; brown trout killed—74; rainbow trout killed—34; total, fish killed—139.

Decoration Day, May 30: fishermen checking out—419; brook trout killed—73; brown trout killed—52; rainbow trout killed—23; total, fish killed—148.

Harry Shawkey, Warren's outstanding bass fisherman, established another conservation record last year that any sportsman could be proud of, according to Warden R. C. Bailey. Of 870 legal size bass landed during 1933, Shawkey retained only 24.

The beginner in bait casting should not seek to cast for distance. Start off with a twenty-foot cast. Accuracy is the answer to effective casting.

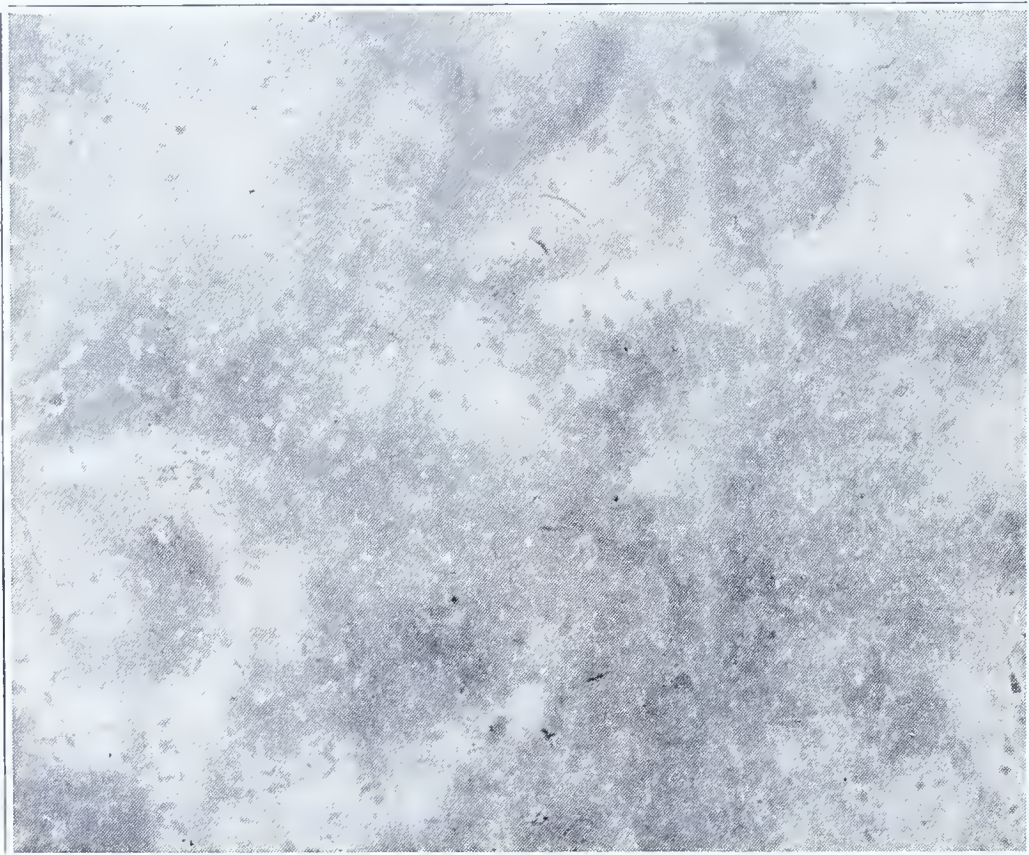
Keep your fly and spinner on the move. It's the flash that attracts the big fellows.

The common bullhead averages 12 inches in length when matured.

FROM PLANKTON TO BLACK BASS

The Life Cycle in a Lake

By C. R. Buller
Deputy Commissioner of Fisheries



NOT JUST DOTS IN THE WATER. THEY'RE DAPHNIA OR WATER FLEAS

IN every body of water nature has created a wonderful balance of existence, or cycle of life. Every sphere of aquatic plant life, every microscopic insect, and every species of fish in an area of water, have a direct bearing upon one another. In other words, the life and growth of one depends upon the life and growth of the other. As an illustration of the cycle of life in a water community, we will take one of our numerous inland lakes in Pennsylvania. In this lake will be the average growth of aquatic plant life. It will be full of the minute water organisms, snails, mussels, and crayfish. The fish life will consist of the black bass, yellow perch, catfish, sunfish, and shiners, a species of minnow.

The plant life not only absorbs the impurities from the water but in turn throws off oxygen, and makes a spawning place for certain kinds of fishes and for various insects which go through the period of transformation in the water. These in turn furnish food for fish and other animal life. It also makes conditions favorable for growth and reproduction of the microorganisms.

We will class the minute organisms present in the water in two groups, namely:

the net plankton and the dwarf plankton. The net plankton are organisms large enough to be caught in a net made of fine silk bolting cloth, while the dwarf plankton are too small to be caught in this manner. These dwarf plankton are the food of the net plankton. Decomposition of vegetable matter or plant life make conditions favorable for growth of the dwarf plankton. During the decomposition a mineral substance is thrown off. This in turn is taken up by the dwarf plankton, and helps to develop the limy shell on some of the net plankton. Net plankton, particularly the ones having the limy shell, furnish food for almost all the young fish for the first few weeks of their life.

The mineral in this shell is highly essential to the health and growth of baby black bass in particular. Thus can be seen the bearing that aquatic plant life has on fish life. These plankton are always present in the water but as the temperature rises in the spring of the year, and before the baby perch are hatched, will start to reproduce very rapidly. The yellow perch being the first fish to hatch in the spring, and its growth being slow for the first eight weeks, as compared with that of the bass, it will feed chiefly upon the plankton. The

next to hatch will be the baby bass. After reaching the stage where they must have some fish life for food, they will prey upon the baby perch. The young of the shiner will next appear. The shiner, intended as food for other fish, is very attractive in appearance, a non-competitor for fish life as food, and very fecund or fruitful. It follows that these little fish will be preyed upon by the baby bass and baby perch. As the bass increase rapidly in size, they will continue to prey upon the perch to a certain extent during the summer months.

The last fishes to spawn in the pond will be the sunfish and catfish. Their chief food will be small snails, mussels and insects clinging to the aquatic plant life. Nature has placed each creature in the water to live upon the other. Each day the lives of individuals are given to maintain the life of certain species. Capacity for reproduction in a species is in proportion to the demand on it as food for other creatures.

If a strange species of fish is introduced, it will at once destroy this balance. Every aquatic animal prefers certain types of food. The stranger or new kind of fish will prey upon the kind of food it desires, making the native in the pond, whose food requirements may be similar, seek elsewhere for its food. If the stranger introduced be a pike, for instance, the bass will have to seek elsewhere for its food, which perhaps will be the small sunfish and catfish. Decrease in their number will follow naturally.

As the sunfish and catfish feed largely upon bottom insects, their drain upon these animals would not be so great, resulting in an increase in the insect population. Since bottom insects feed largely upon the plankton of both kinds, this would result in a decrease of the plankton. The plankton, above all things, is essential to health and growth of most of the young fish. Therefore, the decrease in plankton caused by increase of the bottom insects which feed upon them, would retard the health and growth of the next season's hatch of baby fish. If the young fish cannot secure sufficient plankton, they will take the next best thing, which is their brother and sister or the young of another kind of fish.

After introduction of a new species of fish in a body of water, no doubt in time a new balance between the supply and demand will be created. But in almost every instance, the number in the pond will not be so great as before.

While the Board of Fish Commissioners is making every effort to maintain good bass fishing in Pennsylvania, it requests the fisherman not to introduce bass into waters where they do not already exist, particularly

in small inland lakes. When black bass are introduced into a small inland lake, it is at the sacrifice of the rest of the fish in a small water community.

When the bass is first introduced, on account of the amount and kind of food it requires, it interferes with the natural balance more than any other fish propagated by the Board for distribution. If the history of the black bass is carefully studied, it will be seen that its introduction into the small inland lakes has invariably resulted in a decrease in number of the other species in those waters.

Poor fishing in a body of water can be caused by many things, but the most important are lack of food supply, interference with spawning habits and over-fishing. The simplest remedy in most cases is to restock the body of water, but before doing so, a study should be made of the conditions to determine why fishing in this particular water is on the decline.

Fishermen may occasionally make the remark that fish in certain bodies of water have too much food and will not bite. Fish life, like all other animal life, cannot exist without food. A body of water will support fish life in proportion to the amount of food therein. If a body of water contains an abundance of minnow life, the angler should use some other lure to capture the fish. In some instances they may readily strike at the strange bait as they are quick to respond to a change in diet.

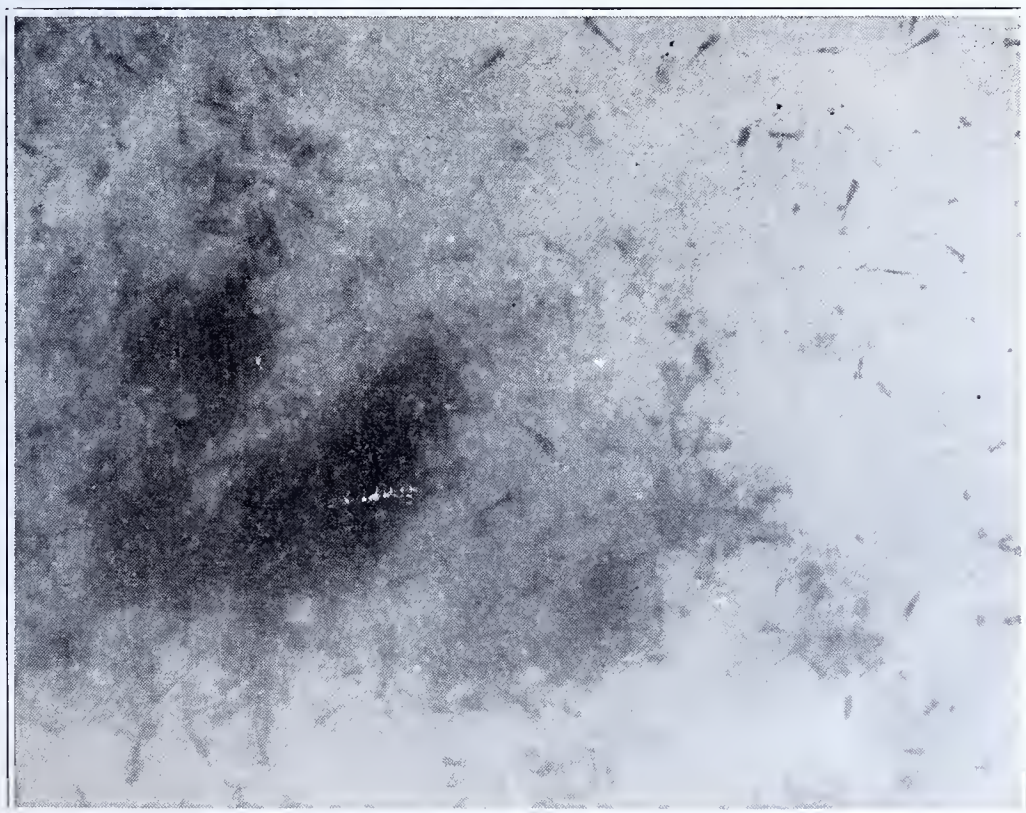
Bodies of water barren of aquatic plant life, brush, old stumps and other cover, usually contain few fish in proportion to their size. This is chiefly owing to a poor food supply. In a body of water of this kind, conditions may be improved by introduction of plant life and minnow life. Plant life in a body of water serves as natural spawning ground for many insects, whose larvae go through the period of transformation in the water and are favorite food for

many fishes. It also provides the growth of minute water insects that the baby fish feed upon, and provides a place of concealment for young fish.

Aquatic plant life in a body of water plays such an important part on the fish life, that men are making a business of growing the plants and selling them in the market for introduction into barren waters. If care is taken in planting such vegetation, and the proper varieties secured, it may be induced to grow in almost any body of water.

Again, from unknown causes, the minnow population in a body of water may become scarce. This may not be noticed until the number of the other species begins to decrease. Now this condition will not be bettered very much by stocking the water with more fish, until the minnow life or food supply is increased. This can be done by restocking with minnows. After they have a chance to reproduce and the pond is inoculated with a new food supply, it may be stocked with other fish.

In many instances, small inland lakes and ponds are used as a source of water supply for manufacturing plants in rural communities. Many of the natural lakes cannot be drained below a certain level, and occasionally artificial dams are constructed at the outlets of the lakes. Consequently, in the spring of the year a new water level is established. Most of the fishes in our inland lakes spawn in spring, and seek shallow water in which to deposit their eggs. In many instances, before the eggs are hatched or young fish are old enough to leave the nest, the water level is lowered with a result that thousands of eggs and young fish are left on the shores to die. This also means the death of eggs and young of the water insects that spawn in a shallow depth of water. These conditions are hard to overcome, but in any body of water, where a constant level can be maintained, conditions will be more favorable for the reproduction of aquatic life.



YOUNG BASS ON THE NEST

A "Game" Turtle

Tal Rowe of Nanticoke had a prize fishing experience while trying his luck on the North Branch during the bass season, writes Warden Russell Womelsdorf. It seems that Tal struck a day for fishing on the famous Branch when the big bass were coming just right. He had taken nine smallmouths, from 13 to 15 inches in length and averaging two pounds in weight.

Then along came something that put up a terrific battle, something that Tal was certain would be the biggest bass caught in Pennsylvania this year. The battle, and it was a battle, according to Tal, of real proportions, swayed back and forth. His rod was broken in the struggle, but finally, and it seemed just luck, the recordbreaker was brought alongside the boat. The tough part of the incident was that the river denizen happened to be a snapping turtle. And the strange part of it all is that said turtle was hooked in the leg.

SPRING FEVER

*Sing a song of springtime
Summer's in the air
Trees are full of blossoms
Beauty everywhere
Birds are in the tree tops
Trout down in the brooks;
It's time you hunt your fishin' togs,
And sharpen up your hooks.*

*Sing a song of springtime
Work goes mighty slow
Spring fever's got you in his grasp
And somehow won't let go
The speckled beauties haunt you
'Fore long 'twill be too late,
You better hunt your fishin' rod
And start a-diggin' bait.*

*Sing a song of springtime
The fever's got you right
You find yourself astream
Awaitin' for a bite,
At evenin' trudgin' homeward.
Gee! how tired you feel;
But tickled most to pieces
With the beauties in your creel.*

*Sing a song of springtime
Those fish are fried just right
They set your lips to smacking
'Fore you even get a bite.
Then happy as a screech owl
When moonlight o'er him beams
You go to sleep a smilin'
And go fishin' in your dreams.*

H. B. SHATTO

Veteran sucker fishermen each year show the way in taking good catches of these popular fish. A. T. Frederick, 73, of Harrisburg, recently caught a 17-inch sucker at the juncture of Silver Spring Creek and the Conodoguinet Creek, Cumberland County.

In bait casting, always wind the line on the spool of the reel as smoothly as possible.

DAYS ASTREAM

A Section Contributed by Readers of PENNSYLVANIA ANGLER

PYMATUNING

By N. R. Casillo

New Castle

THREE years ago, just a quarter of a mile above the site of the present gigantic earth dam that is now impounding the waters of the new Pymatuning Reservoir, one could fish for smallmouth bass and what is more, catch them. I shall never forget one particular excursion taken in 1931, not only because we caught fish, but chiefly because those that were caught were real, honest-to-goodness old warriors; rugged and yet trim enough to warm the heart of the most fastidious bass angler. We were working the logs and other driftwood that clogged that stretch of the stream, and the first bass with which I connected was the largest of the day, a solid three and a half pound specimen, and that's a real fish on any man's hook. My two companions caught a total of twelve, averaging two and a half pounds apiece. In all we caught sixteen bass. And then, to climax this unusual catch, one of the boys, who is locally noted as a "turtle feeler," poked his hand into the entrance of a partly submerged muskrat den and hauled out a thirty-one pound snapping turtle, that later became the chief ingredient of a most savory soup.

In that same stretch I have caught bullheads (called yellow-bellied mud eels by the fishermen of "Jintown"), in quantities to satisfy the most avid of "cat" fishermen. And again, I have experienced the explosive, powerful strike of the hunge. Some have been caught, too. I have also often seen dozens of carp nearly as long as a man's arm disporting themselves in the shallows.

From the above one may form his own conclusions about the fishing in the Shenango River prior to the erection of the dam. At least it was sufficiently varied to satisfy the most exacting bass angler, and still tickle the chap who derives his sport from horsing in a stubborn carp. This wide variety and fair abundance of fish in that part of the river that is now slowly becoming the channel of the filling basin, together with the liberal policy of stocking adopted by the Board of Fish Commissioners, form a combination that should guarantee results in the shortest possible time.

Pymatuning, which in the language of the Delaware Indians, meant "the dwelling place of the man with a crooked mouth," and once the site of an ancient lake, is gradually but surely disappearing from the eyes of man forever. A vast area of swampland, cleared woodland and exhausted farmland, totalling some 16,420 acres, is now becoming the largest lake (natural or artificial), in the Com-

monwealth. Without drawing any analogies or making any comparisons, let it suffice to say that the lake will be sixteen miles long, and vary in width from one and a half to two and a half miles. At its deepest point it will measure some thirty-five feet, with the average depth running about twelve. A secondary dam at the upper end of the reservoir, formed partially by an embankment of the Pennsylvania Railroad, impounds water of the average depth of two feet over an area covering approximately 4,700 acres. The shallowness of this upper basin will possibly be affected by evaporation, so that areas of the swamp will be exposed during seasons of drought. If evaporation is excessive it would not be long before cattails and other sedgy growths would reclaim the land. However, this is only a conjecture based on the observation of smaller similar bodies. Even if this did happen it would tend to enhance it for the purpose for which it is intended, a refuge for migratory birds. This portion has not been cleared, the wild aspect making it more suitable for furnishing food and cover for the seasonal visitants. In addition it should act as a retainer during dry seasons and will thereby help to keep a constant level in the main basin.

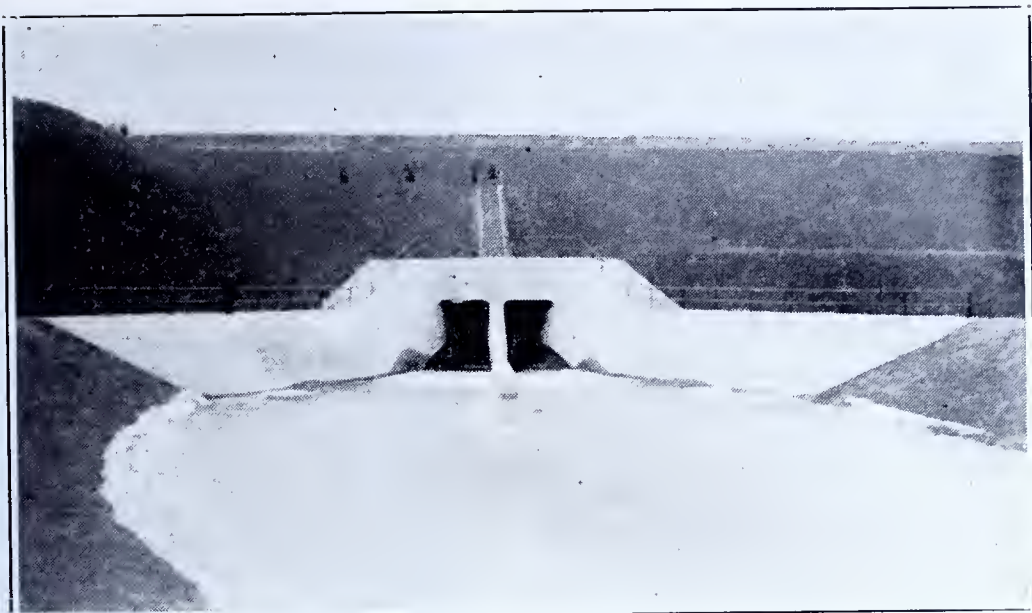
Biologically, a lake formed by flooding marshland is most admirably suited for the

rapid growth of fishes and other aquatic life. The tremendous quantities of organic matter is capable of producing prodigious amounts of the microscopic animal life upon which the fry of all fresh water game fishes depends. It has been definitely determined that time is a minor factor in the growth of fish. Food is the thing, and in a form so minute as to be easily assimilated by tiny fry as well as by the organisms that will form their food as the former increase in size. A noteworthy example in this respect was the development of Maligne Lake in the Canadian Rockies into the finest trout water in all North America. Five years ago that lake was fishless, and physically incapable of supporting fish life because it lacked the tiny animals so essential to all well-populated waters. Accordingly, tons upon tons of old halibut and other fish heads were dumped into the lake to furnish the necessary organic materials and the primary cultures to generate the required food forms. Shortly afterwards fingerling trout were introduced. In less than four years those fingerlings developed into four and five pound grand daddies who already have had countless thousands of progeny.

Because of natural endowment Pymatuning will be capable of furnishing an inexhaustible food supply for billions of forms



SHENANGO RIVER ABOVE THE DAM



MAIN GATE OF THE PYMATUNING DAM

of aquatic life, including fishes. Now then, with these natural conditions augmented by the factors already mentioned, one need not be an optimist to look for fair fishing even inside of two years, providing the lake is open for fishing at that time.

With its completion this section may well be called the lake country of western Pennsylvania, for within a distance of five miles there are three other lakes, namely, Conneaut, Crystal and Mud. Conneaut, of course, has been the mainstay of fishermen for a great many years and it still boasts good fishing—at times (for the game fish population is what any angler would term either sophisticated or capricious). In addition, the great amount of natural food present causes them to turn up their noses at offers of lures and sundry baits. Conneaut has the facilities and food supply for maintaining a far larger game fish population than it now possesses. As for Crystal and Mud Lakes, they are located in Hartstown, and occasionally furnish a patient fisherman with a good catch of largemouth bass.

On one occasion last summer I fished both lakes from four in the afternoon until sometime after midnight. After dark I confined my efforts to Crystal because I doubt if one could follow the treacherous trail from Mud Lake after nightfall. However, I didn't get a solitary strike until eleven o'clock, and then in rapid succession I landed five nice fish. Both of these small lakes are heavily fished, located as they are just off of the main highway between Pittsburgh and Erie.

Statistical and historical data pertaining to the new lake and dam has been more adequately treated by others, but it will not be amiss to review a number of facts. The lake basin is situated mostly in Crawford county, with a small part of it jutting into eastern Ohio. To be more specific, it is eighty miles north of Pittsburgh, forty south of Erie, and seven northwest of Greenville. The attractive village of Jamestown is a little over a mile from the dam. Within a radius of one-hundred miles live approximately 5,000,000 people.

Secretary Lewis E. Staley of the Department of Forests and Waters has been general chairman of the project. Others who have had an active part include our own Com-

missioner, Oliver M. Deibler, Edwin K. Morse, Theodore B. Appel, State Health Secretary, and Public Service Commissioner, George W. Woodruff.

Charles E. Ryder is chief engineer and secretary for the Board, while the consulting engineer is Arthur E. Morgan. The resident engineer is Cloyde C. Chambers.

If the factor of recreation was the only thing to be considered, to those living in a land of lakes the development of this project seems unimportant. For example, what would one lake more or less mean to those fortunates living in Minnesota or New York or even in the northeastern part of our own state? In this partially glaciated region, where lakes are few and small, the completion of Pymatuning Reservoir is awaited with eager anticipation by all types of citizens. Sportsmen, conservationists and industrialists look forward to great things. This, another step in its program of conservation, is progress to which the citizens of this Commonwealth can point with justifiable pride.

MUSKIE BAIT

by

FRED J. KING,

Waterford, Erie County

I would like to relate a fishing experience which happened some years ago on Lake LeBoeuf, in which your present officer W. E.



FRED KING WITH A 22 POUND MUSKIE FROM LAKE LEBOEUF, ERIE COUNTY

Briggs came out second best in what he considered would be a good joke on me.

Briggs and I, who have always been close friends, were in the habit of exchanging bait when either one of us was short, and one evening when we were both at the lake I asked him if he had an extra bait, for me. He told me he had an undersized one which we call an emergency bait, and that I was welcome to it, so I walked to his bait box (nearly one half mile) and found that the emergency bait that he had told me about turned out to be a mullet 13 inches long with a head as large as your fist.

Now here is what happened with this bait. That evening I was able to secure another bait to fish with, and transferred the large bait to my own bait box where it died. The next afternoon feeling the urge to go fishing, and having no other bait, I took this dead one to drag around the lake and caught a muskie that weighed 17¼ pounds. When I dressed this fish, I found the bait in the stomach of this fish, the very next evening took the very same bait and succeeded in getting another strike, but lost this fish.

I can verify this fish story by records that I have of my catches since 1900.

BOARD OF FISH COMMISSIONERS

HARRISBURG, PA.

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PYMATUNING RESERVOIR NOW BEING STOCKED

Through the assistance of Ralph J. Ferris, Field Engineer for the Water and Power Resources Board, the Board has established areas in Pymatuning Reservoir where fish are to be planted. In establishing these points, road facilities were taken into consideration and also water conditions; that is, in most instances, points opposite the mouths of streams were selected. The places in the main reservoir are as follows: Station No. 1, located east of Turnerville; Station No. 2, located between Simons and Turnerville; Station No. 3, located east of Simons; Station No. 4, located west of Westford; and State No. 5, located west of Espyville.

The game sanctuary that has been set aside for both game and fish is being stocked independently of the main body of the reservoir. In this area, fish are being liberated at six designated points.

On April 27, the first consignment of fish was released in this huge body of water. It consisted of pike perch, averaging fifteen inches in length, and sunfish eight inches in length on an average. The majority of the pike perch have already spawned for this season. The catfish and sunfish will reproduce in the area. This first consignment of fish was followed by 160 cans of one-year old bluegill sunfish and 560 cans of yellow perch fry. The baby yellow perch that will make their new home in this area are offspring of selectively bred stock maintained at the Pleasant Mount Hatchery. These fish have been bred over a number of generations to promote size and under ideal conditions many should develop into fish from 12 to 15 inches in length. The Board is confident that the growth of these selectively bred perch will be rapid in Pymatuning. Results obtained in the perch stocking in Lake Walenpaupack, also an artificial body of water, were outstanding. This area was stocked with selectively bred yellow perch fry and today it is not uncommon to catch perch ranging in length from 14 to 15 inches and weighing up to two pounds. When the yellow perch fry were liberated in Pymatuning, 720 cans of pike perch fry were also released. A portion of the fry of both species will be planted in the sanctuary section.

The Board feared when the lake began to fill that owing to the amount of swamp land flooded and to the comparatively small amount of water entering the basin it might be highly acid. However, tests have shown the water to be ideal for fish life.

Irvin Murray, Lewistown angler, made one of the finest catches reported from Tuscarora Creek last bass season according to Warden Charley Long, of East Waterford. Murray's creel consisted of eight fine small-mouth bass and three pickerel. The largest bass measured 18½ inches in length, one of the pickerel was 21½ inches long, and another 21 inches.

In fly-fishing for trout, try to fish upstream or quartering upstream. Trout lie facing the current when on feed and you'll have a better chance of hooking them.

TROUT AND PERCH STOCKED IN APRIL

Brook and brown trout, above legal six-inch size, and yellow perch fry featured the Fish Commission's stocking program during April. Trout released numbered 177,485, while 12,850,000 selectively-bred yellow perch were stocked. Other fish planted were: 269 pike perch over 12 inches in length on an average, 200 mature bluegill sunfish, and 205 mature bullhead catfish.

Following are the waters stocked in the various counties:

Adams—trout, Conewago Creek, Conococheague Creek; yellow perch, Conewago Creek, Little Marsh Creek, Marsh Creek.

Armstrong—trout, North Fork of Pine Creek.

Bedford—trout, Beaver Creek, Buffalo Creek, Raystown Branch Juniata River, Wills Creek.

Berks—trout, Northkill Creek; yellow perch, Manatawny Creek, Boyertown Water Co. Dam on Popdicken Creek.

Blair—trout, Shaw Run, Bells Gap Run, Blair Gap Run, Big Fill Run, Van Scoyoc River, Clover Creek, Sandy Run, South Poplar Run, Piney Creek.

Bradford—trout, Seeley Creek, Daggett Creek, Towanda Creek.

Bucks—yellow perch, Neshaminy Creek, Little Neshaminy Creek.

Butler—trout, Chancey Run, Blacks or Furnace Run, Little Buffalo Creek, Little Connoquenessing Creek, Bear Creek.

Cambria—trout, Cedar Run, Mud Lick Run, Clearfield Creek, Chest Creek.

Cameron—trout, Driftwood Branch.

Carbon—trout, Hickory Run, Hayes Creek, James Run, Pohopoco Creek, Wild Creek.

Centre—trout, Logan Branch, Spring Creek, Bald Eagle Creek, Penns Creek.

Chester—trout, Black Horse Run, Doe Run, Lyndell Creek, Two Log Run, Birch Run; yellow perch, Muddy Creek, West Branch Brandywine Creek, East Branch Octoraro Creek, Big Elk Creek, East Branch Big Elk Creek.

Clarion—trout, Toms Run, Little Piney Creek, Step Creek, Deer Creek, Little Toby Creek, Paint Creek.

Clinton—trout, Paddy Run, Hyner Run, Cedar Run, Tangascotack Creek.

Columbia—trout, Roaring Creek, Fishing Creek.

Crawford—trout, Kelly Run, Brannon Run, Negus Run, McLaughlin Run, Middle Branch Sugar Creek, Muddy Creek, Patrick Run.

Cumberland—trout, Big Spring Run.

Dauphin—trout, Clarks Creek, Stoney Creek.

Elk—trout, Hoffman or Nigger Creek, Bear Creek.

Erie—trout, Trout Run, Beaver Run, Boyds Run.

Fayette—trout, Big Sandy Creek.

Forest—trout, Spring Creek, Coon Creek, Bobs Creek, Ross Run, Fork Run, Beaver Creek, East Hickory Creek, Lamentation Run, Bear Creek, Hunter Run, West Branch Millstone Creek, Salmon Creek, Watson Branch, Tubbs Run, Hunter Run, Prather Run; frogs, Allegheny River.



ED SHEESLEY OF HARRISBURG
WITH A BRACE OF BLACK BASS

Franklin—trout, Falling Spring Creek, East Branch of Antietam Creek, Conococheague Creek.

Fulton—trout, Roaring Run, Brush Creek.

Huntingdon—trout, Laurel Run, Greenwood Furnace Dam on East Branch Standing Stone Creek, Black Log Creek.

Indiana—trout, Laurel Run, Little Yellow Creek.

Jefferson—trout, Five Mile Run, Clear Run, Mill Creek, Laurel Run, East Branch Mahoning Creek, Mill Creek, North Fork Red Bank Creek.

Juniata—trout, Big Run, Lost Creek, Licking Creek.

Lancaster—trout, Fishing Creek; yellow perch, Conowingo Dam on Susquehanna River, Safe Harbor Dam on Susquehanna River, Holtwood or McCalls Ferry Dam on Susquehanna River.

Lawrence—trout, Little Neshannock Creek, Hottenbaugh Creek, Taylor Run, Jameson, or Elliotts Run.

Lebanon—trout, Indiantown Creek; yellow perch, Kiwanis or Lights Dam, Stracks Dam, Stovers Dam, Water Works Dam.

Lehigh—trout, Jordan Creek; yellow perch, Henninger Mine Hole on Copley Creek, Jordan Creek, Indian Creek Park Dam on Indian Creek, Hosensock Creek.

Luzerne—trout, Huntingdon Creek, Wapwallopen Creek, Bear Creek, Pine Creek, Shades Creek, Stoney Run, Wrights Creek.

Lycoming—trout, Wallis Run, Little Muncy Creek, Spring Creek, Big Run, Plunketts Creek, Trout Run, Mill Run, Turkey Run, Lycoming Creek, Loyalsock Creek.

Mercer—trout, Sandy Creek, Little Sandy Creek, Little Neshannock Creek, Deer Creek, Lackawannack Creek.

Mifflin—trout, Kishacoquillas Creek, East Branch Kishacoquillas Creek, Tea Creek, Penns Creek.

Monroe—trout, Tobyhanna Creek, Middle Branch Brodheads Creek, Sambo Creek, Brodheads Creek, Paradise Creek, Lehigh River, Pohopoco Creek, Scott Run, Big Bushkill Creek, Middle Creek, Pensyl Creek.



INTERIOR OF ONE OF THE HATCHERIES. SHOWING HATCHING TROUGHS

Montgomery—yellow perch, Northwest Branch Perkiomen Creek, Ridge Valley Creek, Hosensock Creek, Perkiomen Creek.

Northampton—trout, Saucon Creek, Bushkill Creek.

Perry—trout, Laurel Run, McCabes Run, Shermans Creek.

Pike—trout, Raymondskill Creek, Shohola Creek, Sawkill Creek, Twin Lakes Creek, Little Bushkill Creek, Shohola Creek, Dingmans Creek, Kellam Creek, Mill Rift Creek, Dwarf Kill Creek, Raymondskill Creek, Middle Bushkill Creek.

Potter—trout, Pine Creek, Kettle Creek.

Schuylkill—trout, Rattling Run.

Snyder—trout, Mitchells Run or Beaver Spring Creek, Trout Run, Kuhn-Hooven Run, Aigler Run, Krepp Gap Run.

Somerset—trout, Jones Mill Run, Wills Creek, Laurel Hill Creek, Flaugherty Creek.

Sullivan—trout, Glass Creek, Pole Bridge Run, Black Creek, Lick Creek, Little Loyalsock Creek, Loyalsock Creek.

Susquehanna—trout, East Branch Tunkhannock Creek, East Branch Lackawanna River, West Branch Lackawanna River, Tunkhannock Creek, Starrucca Creek, Gaylord Creek, Riley Creek, Harding Creek, Upper East Branch Tunkhannock Creek.

Tioga—trout, Tioga River, Elk Run, Fall Brook, Seeley Creek, Kettle Creek, Pine Creek.

Union—trout, Spruce Run, Slide Hollow Run, Bear Run, White Spring Run, Penns Creek, White Deer Creek.

Warren—trout, Irvine Run, Hasmer Run, Little Brokenstraw Creek, Ackley or Reynolds Run, East Branch Caldwell Creek, Hemlock Creek, West Branch Caldwell Creek, Arnot Creek, Minister Run, Ben

George Creek, Rock Hollow Run, Tidionte Creek, East Hickory Creek.

Wayne—trout, Big Dyberry Creek, West Branch Lackawaxen River, Johnson Creek, Middle Creek, North Branch Calkins Creek, Sheshawken Creek, Waymart Branch Lackawaxen River, Jones Creek, Wallenpaupack Creek, West Branch Wallenpaupack Creek.

Westmoreland—trout, North Fork Mill Creek, Little Pucket Creek, Tub Mill Run.

Wyoming—trout, West Branch Meshoppen Creek, Mehoopany Creek, North Branch Mehoopany Creek, Bowmans Creek, Riley Creek.

York—trout, Orson Run, Fishing Creek, Toms Run, Reymaher Hollow Run.

When fly-fishing for trout, always be careful on sunny days to prevent your shadow falling on the water. Large trout are extremely shy, and the farther you are from the stream when you make your cast, the better chance you will have of hooking a big fellow. In meadow streams having washed out banks, tread softly, for trout are easily alarmed by vibrations on the stream banks.

Invest in good health, buy and use a fishing license.

Fishing plug bait, Joseph Spornogo of Wilkes-Barre caught a largemouth bass in Stillwater Lake, Monroe county, that equalled the largemouth record for 1933. The giant bass was 21½ inches in length and had an amazing girth of 18 inches. It weighed 8¼ pounds.

A BIG ONE THAT GOT AWAY

The following experience of Special Warden Harold Browning, Scranton, serves to back that well-established belief of fishermen that "the big fellows get away." He writes:

"In company with Chris Hannselman, also of Scranton, last August we went to West End Pond at Gouldsboro for several hours of bass fishing. We arrived at our cabin, which is located near the pond, and immediately started fishing. It was a dark, still night; an ideal situation for luminous plugs. However, after rowing and casting around the pond, we only had two bass about eleven inches which were returned to the water for future reference. Then we decided to try a few casts off a low bridge over the creek running into the dam. Incidentally, we left the flash light and landing net in the boat.

"Here starts the sad, sad story. My very first cast, about 25 feet, aroused an old resident into furious action. I hooked him the best I could on account of such a short cast and the fact that this spot is full of stumps, yelled to Chris to bring the light.

"By the time he got back the fish was laying on his side in shallow water; so he flashed the light on him. What a fish! Well, I held the line taut and tried to grab a hold of him when the blankety-blank line became untied at the plug and, like a chump, instead of reaching in back and throwing it toward shore, I tried to get my hands around him from the front. Needless to say, I didn't get him, although by the time he was out of reach, I was in water up to my neck.

"Three days later, a young fellow by the name of Connelly saw a dead fish along the shore. He fished it in. There was my plug on a 28 inch largemouth bass. I still have the plug—fisherman's luck!"



HERE ^{A_ND} THERE IN ANGLERDOM



Reports of fine catches of trout, brook, brown, or rainbow, have been consistently received from wardens by the ANGLER this season. With warmer weather last month and the appearance of hatches of flies on the water, trout fishing has definitely improved. The famous Big Spring at Newville, Cumberland County, has furnished good fly fishing, according to Warden Frank Sanda, Steelton. Jack Casey of Carlisle, while fly fishing on Big Spring, had failed to get a rise in the morning. At noon the trout started feeding on the surface and in a brief time he had taken six nice brook trout, ranging in size from seven to 10 inches.

H. W. Harper, of Centre Hall, caught one of the finest trout reported from Centre County waters this year. Fishing in Elk Creek, he landed a brown trout measuring 23½ inches in length and weighing 4½ pounds. The catch was made on a minnow.

The record brown trout of the season to date was taken on Still Creek dam by William Zucuskie of Tamaqua. His catch measured 27½ inches in length, had a girth of 16 inches, and weighed 8 pounds, 15 ounces. It was landed on a night crawler.

Deer Lake in Schuylkill County provided good bass fishing last season, writes Warden Anthony Lech of Shenandoah. Tom Brixton of Pottsville caught a smallmouth in the lake last October that measured 21 inches in length and weighed 4½ pounds.

Slate Run yielded seven brown trout to Jess Newcomer of Williamsport recently. The brownies ranged in size from 10 to 14 inches. They were taken on dry fly, the ginger quill being used.

Bear Creek and the Little Connoquenessing in Butler County have been producing good catches of trout, according to Special Warden J. H. Bergman of Butler. Nice catches were made in the Little Connoquenessing by Chris Ferney and Dale Blinn of Butler. Harry Sutton of Bruin scored on Bear Creek.

Fishing on Lick Creek, Sullivan County, Worth Jennings, Frank Welch, and Morris Allen, all of Towanda, made a day's catch of 48 fine trout.

Harris Morgan, of Wyoming, made a great catch of Wall-eyed pike in the North Branch last season. Six big pike, the largest weighing nine pounds, were caught by the Wyoming angler near Coxton.



LAKE WALLENPAUPACK PICKEREL

Taking a 19-inch brown trout on a No. 14 dry fly is no easy stunt, but Sheldon Hoffman of Bellefonte proved that it could be done recently. Just as dusk was settling over Bald Eagle Creek in Centre County, Sheldon, who is popularly known as "Pete," set the hook in the big fellow. Before the battle was over, the trout had carried the fight down stream for a distance of 100 yards in swift water. It weighed two and a quarter pounds.

Nine suckers that weighed 30 pounds were taken from the Susquehanna River near Rupert, Columbia County, by Harry Hollenbocks of Shenandoah, according to Warden Charles Litwhiler of Catawissa. The fish ranged in length from 18 to 24 inches.

Floyd Baker, Special Warden at Scranton, reports good trout fishing on northeastern Pennsylvania streams early in the season. Some of the catches: Middle Creek, Wayne County, F. Davis, six fine brook trout, H. Ramble 16 brookies; Shohola Creek, Pike County, Thomas Parry, nine brook trout, one measuring 13¾ inches; Starrucca Creek, Dr. H. M. Brandt, Scranton, 6 brook trout, 9 rainbows, and two brown trout, the largest brown 17½ inches in length.

Catches of bullhead catfish and suckers were frequently made on the North Branch

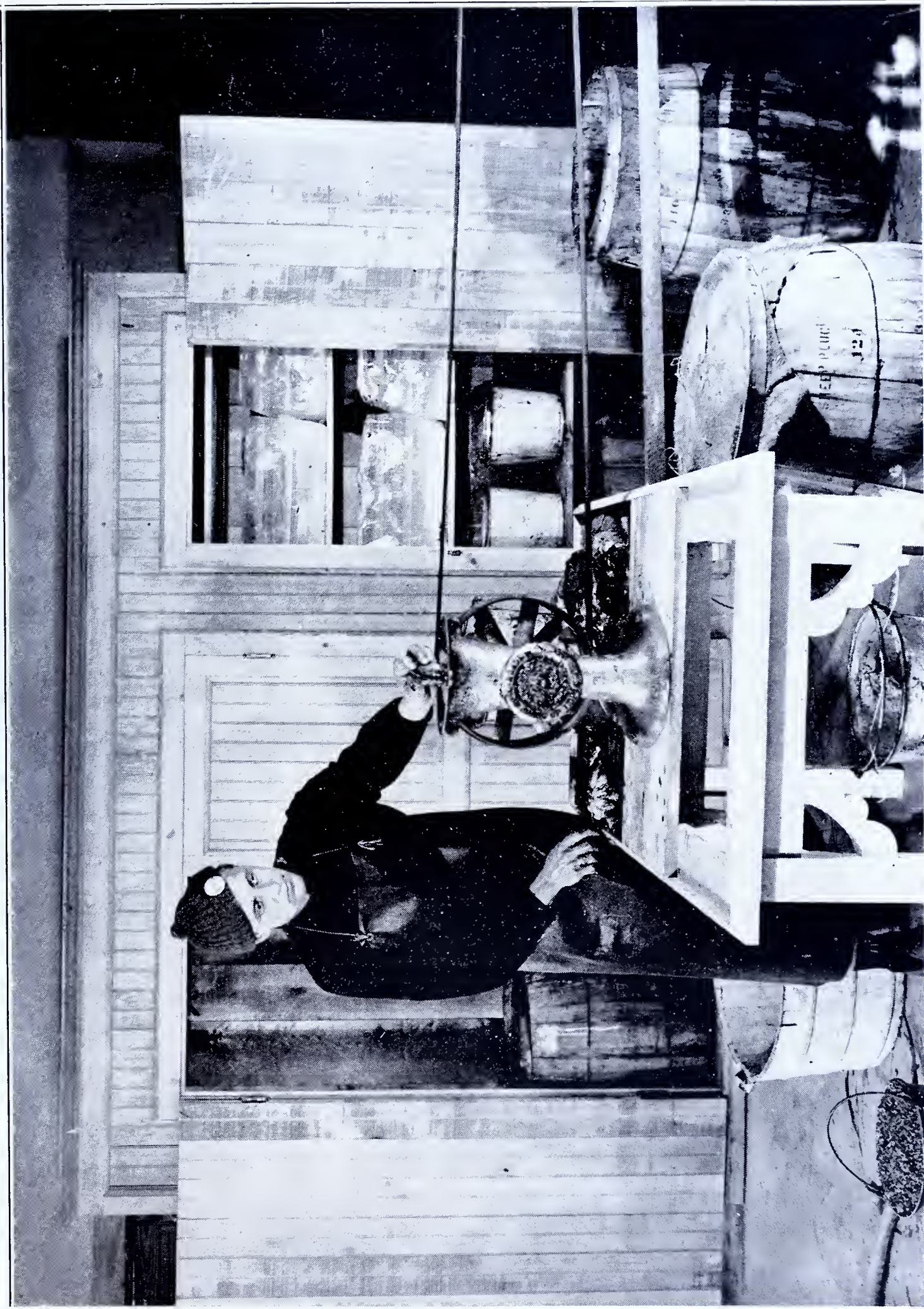
of the Susquehanna River during March according to Warden Joe Podboy of Forest City. Eight suckers weighing 16 pounds were caught by Joe Lazuria, Susquehanna, R. D. Harry Darling of Susquehanna caught seven fine bullheads on March 15.

From Warden Clayton Reed of Ambler comes word of the taking of nine trout ranging in size from 10 to 14 inches on Durham Creek, Bucks County. Art Miller of Easton made the catch.

Piney Creek, Blair County, has furnished good trout fishing this season, according to Warden Lincoln Lender, Bellwood. A total number of 430 trout had been taken by 96 fishermen on opening day. The largest trout measured 14 inches.

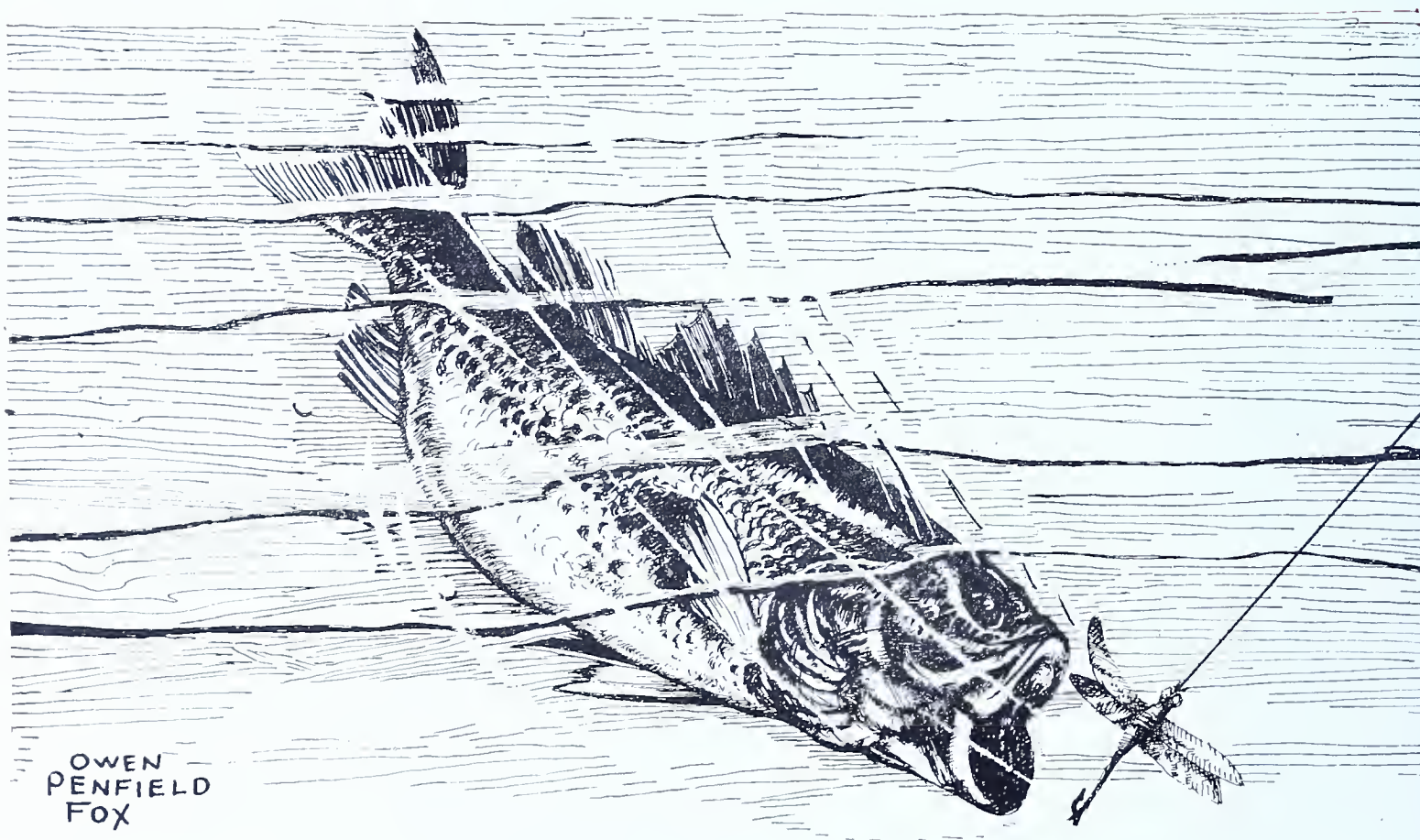
Four trout to warm the heart of any fisherman were taken from Roaring Branch on opening day by Ross Cherington of Kulp. His catch included two brook trout, 9 and 10 inches in length, and two brownies, 14 and 18 inches respectively.

Writing on April 29 from Wellsboro, Tioga County, Warden Horace Boyden reported ice covering a small branch of Mill Run to a depth of 16 inches. Mill Run at the time was frozen over in several places.



INTERIOR OF A MEAT HOUSE AT FISH HATCHERY, WHERE FOOD IS PREPARED FOR TROUT AND OTHER SPECIES

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Here's Action—

A Black Bass Strikes!

PENNSYLVANIA ANGLER



MILADY GOES A-TROUTING...AND THE TROUT LOSES

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NO. 7

OFFICIAL PUBLICATION
BOARD OF FISH COMMISSIONERS

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PENNSYLVANIA ANGLER

JULY, 1934

VOL. 3

No. 7

EDITORIAL

FISHING IS A SOUND INVESTMENT IN HEALTH

TIME and again we hear the expression "it is not all of fishing to fish." Seemingly contradictory at first glance, this quotation assumes the proportions of a really weighty argument for the gentle creed of that patron saint of angling, Izaak Walton. There is relaxation in fishing second to no other outdoor sport. The clean air along a fishing stream and the beauty of the stream itself provide an atmosphere that assures complete rest for the man or woman who indulges in angling. It is a noteworthy fact that men high in public life, professional men and business men who want to relax after a strenuous day in an office, and others who engage in intense mental work find ideal recreation in fishing.

Healthful pastime is one of the outstanding needs in modern American life. Competitive sports provide an outlet for this phase of human life in the larger cities. Wherever available, however, outdoor sports hold an appeal that is irresistible to millions of Americans. The desire to fish and hunt is an inherent instinct that has come down through the ages. Certainly these two oldest sports in the history of mankind are drawing many additional thousands of Pennsylvania men and women to our waters and hunting covers each year.

Perhaps an outstanding factor in this increase in fishing interest has been more available time for the average person to indulge in outdoor sports. Shortening of the working week and reducing the number of working hours a day has made possible for many individuals, even in the larger cities, an opportunity to fish or hunt. And it is significant that many good fishing waters are easily accessible from most Pennsylvania cities. The automobile undoubtedly has also been a factor in attracting our people to streams and lakes. Within two hours drive of Scranton, for instance, are some of the finest warm water lakes and ponds in Pennsylvania. To enjoy an evening's fishing on one of these lakes, and evening fishing is highly effective for bass or pickerel, it would not be necessary to leave Scranton before four o'clock in the afternoon. Good roads in many sections of the Commonwealth have cut driving time considerably, and made the automobile just that much more effective as a method of transportation to fishing waters.

Fishing is essentially restful. Certain features of the sport make it so. It takes thoughts away from the exacting cares of business. In casting, there is always that anticipation of a strike; in still-fishing, waiting for the instant when a bass starts its run to the accompaniment of a whirring reel and rod tip swishing to the surface, or the slower, more methodical biting of a sucker or catfish. An atmosphere of calm along fishing waters is the greatest tonic in the world for frayed nerves and exhausted vitality.

The people of Pennsylvania are fortunate in having available for outdoor sports a vast network of streams and millions of acres of game cover where they can fish and hunt. Pollution, it is true, has greatly curtailed our fishing areas. Thousands of miles of waterways that should provide angling are unfit for fish life, but there are still many of our streams, such as the North Branch of the Susquehanna, that are ideal havens for our anglers during their days astream.

It is my conviction that fishing as a sport offers the maximum in returns on health and contentment. It is an ideal recreation.

THE "SPLASH" FISHERMAN

AS a rule you'll find fishermen to be a mighty considerate group. Sportsmanship is a characteristic of the angling fraternity that can't be denied. But, just as in any sport, now and then one of those fellows who doesn't give a hang for the feelings of other fishermen on the stream does his share and more in spoiling the day's sport. I refer to the angler who splashes through the water, edges in on another man who has carefully worked his way into a promising pool, and sees to it effectively that trout are frightened so that the man ahead of him has little if any chance of taking a fish.

Fortunately these anglers are not exceptionally numerous. Unfortunately, what they lack in number they more than make up for in noise. It is an unwritten code of the angling fraternity that the other fellow merits consideration but for the "splash" fisherman, no code exists save his own. He doesn't go home with a sportsmanlike catch, and he generally manages to place the other fellow in a similar position.

A sporting chance is all the average fisherman asks and certainly this is within his rights. When he is on the stream he likes to think things over. If the fish aren't just hitting right, he doesn't show his temper by lashing the water with vicious casts, and swearing at everything in general. Summing it all up, consideration is the formula for happy days astream. Just figure that there's a big stream with plenty of room for everyone if each fisherman shows real angling courtesy. Good sportsmanship will mean happier fishing trips for our anglers.

O. M. Driber

Commissioner of Fisheries.

LIFE OF THE INLAND WATERS

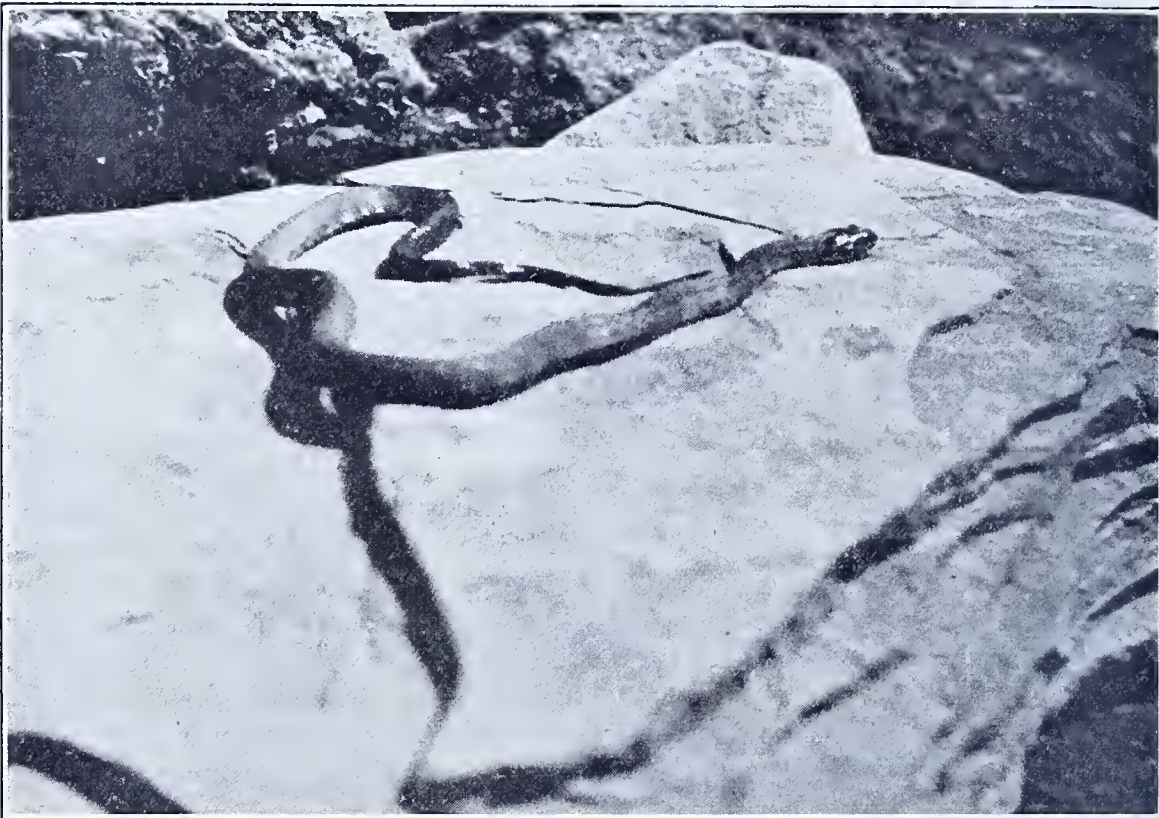
DESTROYERS OF FISH

A MIDSUMMER sun is reflected from the water of the reed-fringed flat and to all appearances, life along the shoreline of a central Pennsylvania bass stream has been driven into hiding by the intense heat. Weeks have passed since the last heavy rain storm lashed the buttonwoods bordering the stream and sent a wall of brown red water through the flat from the tributary streams. Drought conditions have been recorded in the pools and riffles by gradually receding levels. In more than one tiny pocket left by the receding waters minnows and other small fish have been trapped and died. Of fish life's greatest destroyers, drought ranks first. But drought is aided in the destruction of life in the inland waters by natural enemies that give no quarter. Fang, scale and feather are leagued against the fishes of stream and lake.

Fish-Eating Birds

Of the creatures that prey on fish, birds perhaps are the least harmful as a group in Pennsylvania waters. While individually a great blue heron may destroy many fish during its summer visit, this bird is comparatively rare. The American osprey or fish hawk is in a similar category, and although the smaller green heron or shikepoke is more abundant, its food consists chiefly of toads, frogs, lizards, and occasional minnows found along the shorelines.

In a lightning-blasted tree stub a short distance from the stream, a pair of ospreys



THE WATERSNAKE. ARCH ENEMY TO FISH LIFE

have built their nest. Wheeling gracefully above the flat, the male bird presents a picture of rhythm and power in flight. Its breast, head, neck and lower parts are gray-

ish white, the breast feathers being slightly spotted with brown. The upper portions of its body and head and the pinion feathers of the wings are dusky brown. A dusky stripe occurs on each side of the head. As it circles above the stream, the sun accentuates the striking gray-white of its underplumage.

Suddenly its rhythm of flight is broken and the osprey drops like a plummet toward the water. So great is the force of its fall that it is submerged beneath the surface, to rise an instant later with a large sucker in its claws. In the clear water of the flat, many fish are targets for its unerring plunge for prey. Frequently, fish that swim in schools near the surface, such as the sunfish and yellow perch, are taken.

More serious in their inroads on inland water fishes are the belted kingfishers. These small, crested birds, not much larger in body than the robin, predominantly blue and white in color and having long sharp bills, stage their forays from branches of trees or stubs overhanging the stream. Kingfishers during the summer take heavy toll of fish life.

Darkness veils the activities of the blue heron. At the approach of dusk, a great, long-legged bird with slender arching neck stirs from the rushes where it has lain concealed during the day. Of the feathered predators, the plumed blue heron is perhaps most accomplished. Its rapier-like bill flashes at a passing fish with such deadly accuracy that the quarry seldom eludes it. In stilt-like featherless legs, it stands motionless in the shallows of the flat during most of the night. It is a beautifully plumaged bird. The top of its head and cheeks are white,



DRAWING BY GEORGE GRAY

UNMATCHED IN VORACITY, THE SNAPPING TURTLE

the sides of the crown and occipital crest black. The neck is light purplish gray in color, while the throat line is streaked with black, white and rusty. The upper parts are predominantly slaty blue, the wing feathers deepening to black on the outer edges. The plumes of the bird are colored pearl gray in most part, while the under parts are chiefly black streaked with white. Its bill and the iris of the eye are of yellowish tint, and the legs are blackish.

There is a certain glamour in the flight of an osprey or the statuesque poise of a blue heron that undoubtedly adds to the charm of fishing and their rarity removes both birds from serious consideration as destroyers of fish.

Arch Enemies of Fish

From the shoreline of this fishing stream come two arch enemies of fish life.

Lurking in the silt and mud beneath an overhanging bank is a giant snapping turtle. This armored reptile, all of 40 pounds in weight and two feet long, might well be termed the outstanding foe to fish life in the inland waters. Even small ducks are not excluded from its diet if an opportunity to pull one beneath the surface is presented. Insatiable in appetite and crafty in its fishing methods, it is a foe to be reckoned with even by the active and aggressive bass.

There is something repulsive in the appearance of the big snapper. Its upper shell, or carapace is coarsely serrated on the rear margin. In young specimens, three keels on the upper shell present a rough appearance, but the big reptile beneath the bank has a somewhat smooth protective covering. Clinging to it is green slime and silt that serve to conceal it admirably when seeking its prey on the bed of the stream. The head is large, and armed with powerful hooked jaws. Its long tail has two rows of scales on the under-surface and a row of flat tubercles above. The under-shell, known as the plastron, is comparatively small and roughly oval in shape. Aquatic by nature, it seldom leaves the stream save in the instance of the female when she deposits her eggs. Just how much fish life the snapping turtle may destroy in a season is a matter of conjecture. It is known that one captive turtle of this species consumed from three to five pounds of fish a day, covering a period of one week.

Paul L. Swanson of Wesley, who has made an intensive study of the habits of this voracious reptile, writes:

"The female hunts for a suitable place in which to lay her eggs during June or July. These eggs measure about an inch in diameter, are spherical in shape and white in color. The female burrows in the sand or soil until she is fairly well covered. After depositing the eggs she crawls away, and dirt falling off her back into the depression usually leaves the eggs covered. Most authorities place the number of eggs at 20 or 30, but a large specimen caught in Minnesota by David Swanson and donated to Carnegie Museum contained 64 eggs.

"One day I discovered a sucker over a foot long which had made the fatal mistake of thrusting its head into a paint can. Its pectoral fins were on the inside, and the lip of the can prevented the fish from ever being able to release itself. This sucker

was swimming wildly about, a large piece of flesh missing from its side. When finally caught, the shape of the bite left no doubt that a snapper had taken advantage of the sucker's misfortune and procured for itself one good bite of fish."

When the shadows from the buttonwoods lengthen over the stream, the big snapping turtle slides from the shallow ledge to seek its food. Its passage through the lanes of the weed beds seems like the movement of a bulky shadow in the darkening stream. Claw-armed legs propel it smoothly through the water, and just where the weed bed verges into open water of the flat, the snapper sinks quietly to the bottom.

On the alert for food, it resembles perhaps more than anything else a moss-grown rock. Its first prey is a graceful chub foraging near the weeds. As the fish swims over the

snapper, the reptile's head flashes from beneath the shell with almost unbelievable rapidity. Struck from beneath, the fish is given no warning. So powerful are the jaws propelled by the elastic neck of the turtle that they crunch life from its victim in an instant. It is grimly purposeful, this creature, and from the time it leaves hibernation in the spring until it again enters a dormant state in autumn, it looms as a constant menace to life of the inland waters. From a fisherman's viewpoint it has one redeeming feature. The meat makes savory soup.

The snapping turtle has competition from another reptile destroyer in its evening foraging. Near a tangled mass of brush in the upper section of the flat, a V-shaped riffle spreads over the water. At the apex of the

(Continued on Page 13)



NOT PRETTY TO LOOK AT, THESE SALAMANDERS

THIS WATERSNAKE WANTED FLIES

Gus Palmgren of Lanse, while fishing dry fly on Spring Creek early in June, set the tiny feathered lure into what he believed was a monster trout. The battle that followed, according to Special Warden Dave Dahlgren of Philipsburg, served to make his belief a conviction.

But when the supposed granddaddy of all the big brownies of Spring Creek was landed, disappointment was his lot. Glancing into the landing net he saw a three-foot watersnake. The snake, according to the report, had almost swallowed the cahill fly.

ORGANIZE BEDFORD COUNTY FEDERATION OF SPORTSMEN

On May 7, 1934, the officers and interested members of nine Bedford County sportsmen's clubs met in the Odd Fellows Hall at Saxton, to organize the Bedford County Federation of Sportsmen. The Bedford County organization is a direct unit of the Pennsylvania Federation of Sportsmen.

The meeting was presided over by Merle Merritts, of Altoona, vice-chairman of the Pennsylvania Federation of Sportsmen, who with Robert Henderson, of Huntingdon, were the principal speakers of the evening. The plan of organization, the principles and purposes of the organization were outlined by Mr. Merritts, while Mr. Henderson explained in a most interesting manner, "Why It Does Not Pay to Be a Poor Sportsman."

The officers of the county organization consist of a chairman and a secretary-treasurer, who are chosen by delegates elected from each club. At this meeting, however, the delegates had not as yet been named, so a temporary chairman and a temporary secretary-treasurer were chosen to serve until the regular officers could be elected by the delegates of the various clubs. Other temporary officers were: Harry A. Eichelberger, Saxton, and W. H. Ritchey, Wolfsburg, chairman and secretary-treasurer, respectively.

The officers of the clubs were requested to have a regularly elected delegate attend a meeting to be held a short time later for the purpose of electing a permanent chairman and a permanent secretary-treasurer. This meeting was held Friday evening, May 25th, in the Smith Vocational High School auditorium at Yellow Creek. At this time, Mr. Eichelberger was again honored by being elected regular chairman while Carl Walter, Fishertown, was named as regular secretary-treasurer.

The nine clubs represented by the Bedford County Federation of Sportsmen are as follows: Rainsburg Game and Fish Protective Association, Rainsburg; Raystown Rod and Gun Club, Wolfsburg; Home Rod and Gun Club, Yellow Creek; Six Mile Run Sportsmen's Association, Six Mile Run; Broad Top Game, Fish and Forestry Association, Broad Top; Woodvale Rod and Gun Club, Wood; Hopewell Rod and Gun Club, Hopewell; Bedford County Game Protective Association, Fishertown; Saxton Sportsmen's Association, Saxton.



H. C. SMITH OF MONESSEN SHOWS THE TROUT IN HIS CREEL TO TWO BOY ANGLERS ON ROARING RUN, WESTMORELAND COUNTY

THE CARP. PROBLEM IN THE EARLY 90'S



When was the German carp introduced to Pennsylvania waters? Time and again that question crops up with fishermen and the following interesting facts taken from the Report of the State Commissioners of Fisheries for 1892-93-94 throws some light on the matter. That the introduction of this fish, which today has not only many enemies among our fishermen but friends as well, was accidental in large part is borne out by the following article.

A careful study of the carp and its habits in recent years has tended to reduce to considerable degree the belief that it is a major menace to food and game fish of our inland waters. Destructive though it is to vegetation and small aquatic organisms, its young provide a valuable source of forage for game fish in the waters it frequents. Insofar as spawn-destroying is concerned, the sunfish, bass and rock bass are amply capable of protecting their nests from even large carp, while suckers, wall-eyed pike, pickerel and yellow perch deposit their eggs and leave them when low water temperatures hamper

great activity on the part of these bottom feeders.

The article from the early report of the Board follows:

"The German carp has been so long domesticated in North European waters that its original habitat is somewhat obscured, although it is supposed to have been central Asia. When it was introduced into Europe is in doubt, but it is known with absolute certainty that it was regarded as an important food fish and was extensively cultivated in Austria as early as 1227, and one celebrated establishment with large, extensive ponds now in existence near the town of Wittingau, Bohemia, can be traced back to the year 1367. These ponds today cover an area of more than 20,000 acres, and the proceeds amount to over 500,000 pounds of carp annually.

"The fish is supposed also to have been introduced into Upper Lusatia, Saxony, Silesia, Bavaria, and Poland in the beginning of the fourteenth century, and in England in 1504. Now, nearly every river and lake in Europe teems with them. Even the Black and Caspian seas contain great numbers of carp.

"In Germany the carp are cultivated with as much care and industry as any domestic animal or fowl. Indeed, there are some Germans to whom the fish is the chief source of revenue, and to others among the most important. Besides the great carp ponds just mentioned land owners with hundreds of acres devoted to this purpose are not uncommon. By the Germans, Austrians and Russian Poles the carp is not looked upon as a wild fish but as a creature as much domesticated as cows, sheep or fowl.



THREE BROWN TROUT, LARGEST 22 INCHES, CAUGHT IN YELLOW BREECHES, CUMBERLAND COUNTY, BY McCLAY GIBSON, CARLISLE

"Among most Americans the fish is not regarded with much favor, but the Germans and those of some other European countries consider it a fine table fish, ranking with the very best, particularly the leather carp, although, the mirror carp is not far behind in the number of its admirers. Among the few Americans who were enthusiastic concerning the carp was Professor Baird. Many years ago he believed the day would come when it would play an important part in our commercial food fishes. He attached much importance to its introduction and believed it would 'supply an oft experienced want of a fish for the South, representing the more northern trout, and at the same time a species capable of being cultivated in ponds.'

"It is to be feared that there are today not many who would be willing to voice Professor Baird's enthusiasm. On the contrary, utterly ignoring whatever merits there may be attached to the carp, it is quite certain that the majority of anglers are more apt to execrate the man who first introduced the fish quite as heartily as they might Benedict Arnold, or the misguided men who originally imported the English sparrow. In fact, there are few fishes more heartily anathematized by American anglers. They fail to see a single redeeming feature in the creature, and charge it with many bad qualities, the most serious among which is the allegation that it is a more inveterate spawn eater than the eel. The fecundity of the fish is so great that it is overrunning all the rivers and streams of the country, and its enemies claim that since it does not take the hook readily on account of its spawn eating hab-

its, will in a few years practically exterminate all the valuable food and game fishes despite the efforts of the various fish commissions.

"While perhaps the views of those who anathematize the German carp may be as wide of the mark as those of its admirers, there is strong ground for believing it is not altogether a desirable fish to be given the freedom of the public waters.

"Just when or by whom the German carp was introduced into this country is not known. The first generally accredited importer is a Mr. Poffe, a Californian, who, somewhere prior to 1870, brought a few scale carp to his ponds in Sonoma, where they increased so rapidly that he went into the business of supplying them to the markets. A little later it was reported that there were carp captured occasionally in the Hudson and Delaware Rivers, but it is generally believed they were gold fish which had escaped from private ponds and multiplied in these rivers. In the autumn of 1876 the United States Fish Commission made its first attempt to import this fish, but the effort was a failure, as all the specimens died during the voyage in consequence of furious storms which prevailed. A second and successful attempt was made in the spring of 1877, and 345 leather, mirror and scale carp were placed in ponds at Washington.

"Some of the progeny of these were sent to the Pennsylvania Commissioners, who distributed the greater number to farmers, a few only being deposited in public streams. If, as is generally believed, nearly all the

FLY-FISHING WINS ANOTHER CONVERT

The brown trout of Ball Creek, in Wayne County, are directly responsible for the conversion of Willard Appleman, Bloomsburg angler, to fly fishing; according to Warden Myron Shoemaker of Laceyville.

In company with Bill Corey, of Bloomsburg, Willard was on Ball Creek recently when the brownies were cutting up high jinks with flies. Corey was fly fishing, with Appleman looking on, when the rise started. In a brief time, he had creeled two fine brown trout. That was just too much for Willard, who had never cast a fly before.

Corey promptly complied with Appleman's request that he be permitted to cast a fly with the former's rod. The first cast was made with the line slapping the water and fly and leader striking a big rock above the pool. The fly then dropped lightly and naturally to the water where a 22-inch brownie struck it. The ensuing battle provided enough thrills to last any fisherman a week. It terminated with Corey holding the rod and Appleman wading into the stream to grasp the big trout under the gills. When weighed, the brownie tipped the scales at 3 pounds, 3 ounces.

And Willard Appleman is now an enthusiastic convert to the fly fishing method.

TOM MOSIER SCORES WITH THE DRY FLY

Tom Mosier, Centre County game protector, who aroused plenty of comment by his unusual experience on Bald Eagle Creek last year by having a brownie jump into his landing net, returned to the scene of his unusual experience recently and scored a decisive victory for the dry fly.

Fishing one of these jaunty feathered lures tied on a No. 12 hook, Tom landed a 20-inch brown trout on Bald Eagle Creek that tipped the scales at four pounds.

warmer waters of the Commonwealth abound in this fish, they have for the most part become so through escaping from these private ponds. It is certainly a fact that the Delaware River is full of carp of an enormous size and recently a few fishermen on that river have devoted themselves almost entirely to their capture."

CAPTURES WATERSNAKE ON BARBLESS DRY FLY

There were plenty of witnesses in the taking of a watersnake by way of a dry fly at the Spring Creek trout farm and stream improvement project recently. Kenneth A. Reid, Board member, who made the unusual catch, writes:

"Incidentally on Saturday an incident occurred while I was instructing at the ladies pool that might be of interest to your readers. At least it made a tremendous impression on the dozen or so spectators. While instructing one of the ladies, someone called my attention to a large watersnake asleep on a log that projects above the water on the far side of the pool at a distance from 55 to 60 feet. As no one had a gun I undertook to catch the snake by casting over him with a fly and hooking him. The first cast fell about two feet short and hooked a trout. The next cast went about two feet over the log where I couldn't see it and in attempting to hook the snake found I had another trout on it which I had to force over the log a few feet from the snake and land before I could continue the attack. On the third cast the fly dropped just a few inches beyond the snake with the leader resting on its body and a quick twitch of the rod set the hook in the snake's neck and I dragged him back through the pool, landed and killed him. He had one nice brook trout in his stomach which accounted for the peaceful sleep and he no doubt would have accounted for many more if he had not been killed. I have done the same thing on a number of occasions but never before a large gallery as in this case."

PLAN TRAP SHOOT

The Bedford County Game Protective Association will hold a trap shoot at Osterburg, Pa., on Saturday, August 4th. The shooting, which will be held in conjunction with a general picnic, will begin at 9:00 A.M. and last until 6:30 P.M. Everyone invited.

ARTIFICIAL FLIES FOR TROUT AND BASS

By Kenneth A. Reid

Member Board of Fish Commissioners

PROBABLY no topic of trout fishing has been so much discussed as the subject of flies. The patterns and types are legion and there are almost as many different opinions and theories held by those who use them as there are patterns. Much of the written information on the subject has been more misleading and confusing than otherwise, and in this brief treatise we will endeavor to give a few simple facts that may tend to unravel some of the confusion regarding flies and their use.

Often on the stream when trout have risen readily to our fly, we have been hailed by brother anglers with, "Hey, brother, what fly are you using?" A perfectly natural question, but most of the inquirers place entirely too much importance to that one consideration. Almost invariably they think that all they need is that identical pattern of fly to achieve the same success, when as a matter of fact there are a number of other factors, several of them more important, that enter into the solution of their problem. Nine times out of ten we could change to a different pattern without affecting the result. The form (well or poorly tied), the size of the fly, and the way it is cast and fished on the water, are all more important than the particular pattern of dry fly. Of course, there are exceptions when trout become very selective and when patterns seems to assume greater importance, but these cases are the exception, not the rule. Too often the trouble lies in unsuited or poorly balanced tackle or lack of ability to cast and fish it properly, or both.

We are often greatly amused when fishing a strange stream to be informed that to take trout on that particular stream a particular pattern must be used. Such convictions are formed as a result of some outstanding success achieved by an expert angler who happened to be using the pattern in question; whereupon all the other fishermen on the stream adopted the same fly and never took the trouble to find out if other patterns might not prove equally effective if fished with the same confidence.

But in spite of the foregoing, the fly is an important factor in successful fishing. Particularly in the case of dry flies, most of the commercial articles leave much to be desired. A good dry fly is a totally different article from a good wet fly, and there is no such thing as a combination wet and dry fly. Of course you can catch some trout on a bedraggled dry fly that has become waterlogged, but you would do much better when the trout are striking underwater flies if you put on a sparsely tied wet fly that made no pretense at floating. Conversely, a wet fly, if it deserves the name, is impossible for satisfactory dry fly fishing.

Many dry flies are only half dry and very poor floaters, and most wet flies are too

heavily dressed so that they are about half way between a good wet and a good dry fly. They can be materially improved by trimming out about half of the wings and considerable of the hackle. Perhaps you have had the experience of catching a number of trout on the same wet fly until a good deal

point of the hook, they will soon mat down and become waterlogged. Every time a fly is picked off the water on the back cast, the friction of the water tends to bend these hackle hairs backward, and the air resistance during casting is in the same direction. If they are tied at a backward slant, they will soon mat against the body and sink the fly. On the other hand, if good stiff hackles are used and they slant a little forward rather than backward, they will not readily become waterlogged. Figures 1, 5 and 7 will illustrate correctly tied hackles, while figures 3 and 4 show a poorly tied "dry fly," which is dry only in the name that the manufacturer puts on his package, and only as long as it stays in that package and out of the water.

Another factor that is apparently poorly understood by many fly tiers is the relation to the size and weight of the hook to the buoyancy of the supporting dressing. I have seen many otherwise excellent dry flies that were ruined by being tied on a hook that was entirely too large or of too heavy wire gauge to float properly. Even if the dressing will support it on the surface, a heavy hook makes a fly alight too heavily on the water. A dry fly cast should end three or four feet above the surface from where the fly should float down to the surface like a thistledown.

To be most effective, a dry fly should float high on the water, supported by its hackles and tail, not by its body and wings. A good stiff tail is an important aid to buoyancy. Without a tail, many otherwise well tied flies will "sit down in the water." Figure 3 illustrates a poorly tied dry fly in which the hackles are soft, and slanting backward, the tail is too short, and the hook entirely too large and heavy for the dressing. Figure 4 is a head-on view of the same fly showing irregular winding of the hackle. Such a fly is bound to ride on its side instead of upright, if it floats at all.

For fishing large streams and heavy water, the fan wing fly has some very distinct advantages. When properly tied, it floats high and the large wings give it excellent visibility to the angler on swift runs and in poor light conditions. A truly tied fan wing is a joy to use, but a poorly tied one is an abomination—and unfortunately the majority of the commercial variety are in the latter category.

Tying a fan wing requires more exacting care than any other type of fly. The wings must be carefully selected and matched so that the curvature of each feather is the same, and they must be tied in a true line with the shank of the hook. If they are cocked at an angle to the hook shank, or if they are not matched for size and curvature, they will spin and twist a fine leader in casting, ride on their side and do all man-

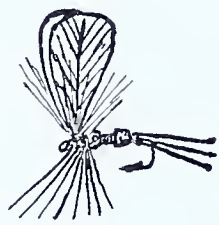


Fig 1.

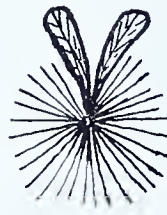


Fig 2.

Correct Fan Wing Dry Fly.

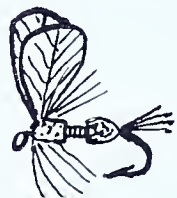


Fig 3.



Fig 4.

Poor Fan Wing

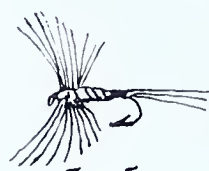


Fig. 5

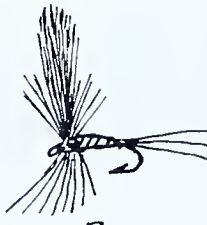


Fig 7.

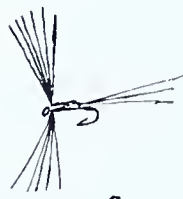


Fig. 8



Fig. 9



Fig. 10.



Fig. 11

of the dressing was chewed off, and found that it became increasingly attractive to the fish the more bedraggled its appearance. The reason was because its bedraggled form more closely resembled the form of the underwater insect on which the trout were feeding, of which a nymph is a more correct imitation.

In tying dry flies, many tiers make the error of depending on quantity of hackle for buoyancy, rather than quality. If the hackles are soft and slant back toward the

ner of undesirable things. While they are most effective, particularly toward evening, they are not a fly for either a careless fly tier or a careless angler. They should be cast somewhat slower than the usual fly and they must be carried in a container of sufficient depth so that they will not be crushed or mussed up. They also have the disadvantage of being rather fragile and are often spoiled by the capture of one good fish that is hooked so he can chew the fly.

The bi-visible is one of the most popular of dry flies. The wisp of white hackle at the head gives it visibility second only to the fan wing, and it floats very well. Also it has the advantage of being able to stand a lot of punishment, for when it becomes watersoaked, it can be dried and fluffed back into shape by drawing backward through the fingers and a handkerchief. Most of the commercial bi-visibles are palmer tied—hackles tied the whole length of the body—but Figure 5, sometimes called a “semi-visible,” casts better and floats well enough. Incidentally, the sparser the hackles to attain the necessary buoyancy, the more effective.

Figure 7 illustrates an effective dry fly with a hair or feather spray for wings. They float well and have good visibility. Figure 8 illustrates the spider type fly, with long, sparse hackles tied on a very small hook, usually size 18. Figure 9 illustrates a wet fly with sparse dressing, as it should be, while Figure 10 illustrates the “shameful, naked nymph.” Figure 11 illustrates a bucktail or streamer with jungle cock shoulders. It really represents a minnow rather than a fly of any variety. In all three of these latter “flies,” the hooks should be heavier than in the dry flies, for they are intended to be fished beneath the surface.

We have always strongly advocated the dry fly, because we believe that until an angler has really mastered dry fly fishing, he has not derived the greatest measure of sport that is open to him on our streams. Even when fish are not rising, the day is not quite so blank when you cast a dainty fly upstream and watch it bob jauntily down the current with wings cocked and erect. There is a real pleasure in casting and watching a floating fly that is absent with the sunken variety. After all, the only really valid excuse for going fishing is because it is darn good fun, so you may as well get the most fun out of it. Incidentally, fewer fish are injured on a dry fly than by any other form of fishing. But don't let anyone mislead you by telling you that the dry fly is very pretty but not very effective for catching fish. When properly handled it is most attractive to the trout—and peculiarly so during the last two or three hours of daylight.

In recent years, fly fishing has become increasingly popular for bass as well as trout. While the spinner and bucktail, spinner and pork rind, and other underwater fly rod lures have been successfully used for many years for bass, the effective floating lures and their use are not so well known. While bass will not always come up for the surface lures, they usually will, and if you have never tried them, you have some sport ahead of you that will make you wish you had tried the method long ago. A spinner is

not a pleasant thing to cast on a fly rod, and one misses the thrill of the smashing surface strike a bass makes on a floating lure. Of course, bass floating lures are not as pleasant to cast as a dainty trout dry fly because of their greater bulk and weight, but some of them cast very well and they are decidedly more pleasant to cast than a spinner or any underwater lure. The pull of the water on the lift and the hit at the end of the back cast that one gets with a



Fig. 12.

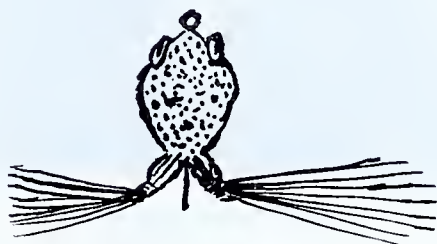


Fig. 13.

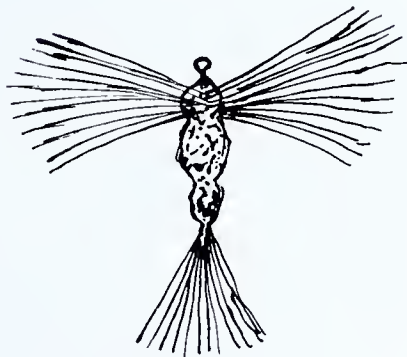


Fig. 14.

spinner is delightfully lacking with these fuzzy surface lures.

There is a great variety of surface lures for bass available, and we presume that all of them will catch some fish. The bat wing type bass bugs with wood or cork bodies, and the feather minnows with wooden beads have proved their effectiveness for many years. More recently, quite a variety of bucktail creations have made their appearance, so that there is ample to choose from.

Fishing surface lures for bass has some points in common with dry fly fishing for trout and some points of distinct difference. In both cases the line should be well greased so that it will always float on the surface, and with bass, it is also advisable to grease the leader. In dry fishing for trout, the fly should float naturally with the current without drag from line or leader and with-

out imparting artificial motion by the rod. In bass fishing, the effectiveness of the lures is largely dependent on the action imparted to them by the rod. After resting on the surface a few seconds—when a bass will sometimes take it—it should be retrieved with an irregular swimming movement imparted by short twitches of the rod top. It is generally advisable to swim it a yard or two, stop, and then continue the retrieve. Be versatile in your fishing of the lure, at least until you discover the particular movement that the bass prefer at that particular time.

Figures 12 and 13 illustrate a side and top view of a hair frog that has proven particularly attractive to large bass, both small and large mouth and in both rivers and lakes. When it is drawn on the surface with short twitches, the legs kick in a most lifelike manner, and a sharp jerk will cause it to blow sizeable bubbles. It exemplifies what is desirable in bass surface lures: the greatest fuss on the water for the size of the lure. Tied on a number 2 hook, it casts very well.

Figure 14 illustrates another bucktail creation that is also quite effective. Tied on a number 4 hook of light gauge, it casts better than the hair frog, and takes good bass when they seem to be wary of other lures. A combination of a few lures of this general type with a few spinners and bucktails for those occasions when for reasons known only to themselves, bass refuse to come to the surface, will equip the fly rod angler for some real sport with bass.

We might mention that the bass fly rod should weigh at least five ounces, and preferably between 5½ and 6 ounces and 9½ feet long for the best casting of lures. The line for such a rod will likely be a D level or an HCH double taper. Leaders are usually 4½ feet, but we prefer them 7½ or 9 feet.

The lures shown in Figures 12, 13, and 14 are not available commercially. They are tied by my fishing partner Joe Messinger, and he has more orders than he can handle.

CHALK UP ANOTHER GIANT BROWNIE

To Spring Creek, one of the greatest trout streams on the eastern seaboard, goes the distinction of yielding the runner-up brown trout taken this season in Pennsylvania. John Hobba, a disabled war veteran, who makes his home with his sister at Milesburg near Bellefonte, had the distinction of landing it.

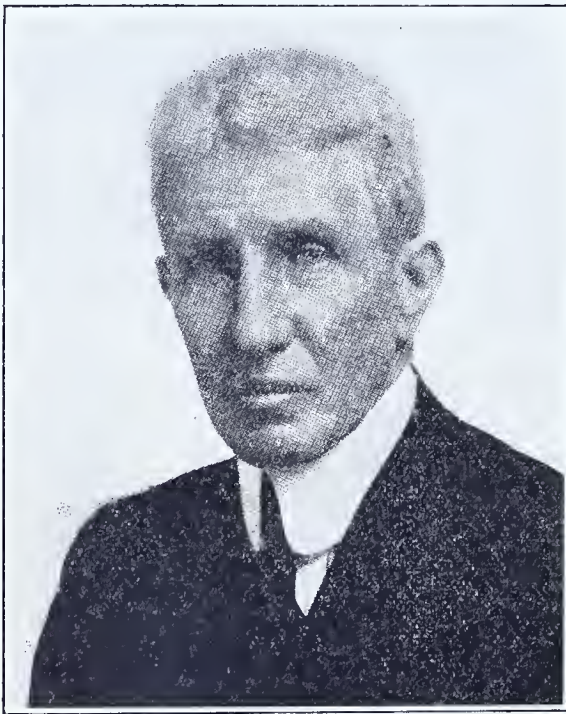
That brown trout in Spring Creek are exceptionally well-fed is demonstrated by the following measurements and weight of Hobba's giant brownie. In length it measured 26¾ inches. Its girth was 16 inches, and weight, 7 pounds, 15 ounces. Catching big trout is a habit with Hobba's family. Several nights before John made his catch, his brother Bob played a 20-inch brown trout to a finish.

THE LOYALSOCK, A TROUT STREAM

By Hon. Charles Lose

AMONG the mountains of northern Pennsylvania, in a deep and somewhat narrow valley there flows a stream whose Indian name, Lawisaquick, signifies Middle Creek, called by the white man "Loyalsock." It is the middle one of three parallel creeks (Muncy, Loyalsock, Lycoming) down which the Indians made frequent forays against the white settlers to the south of them. If a chip flying from a woodsman's axe chanced to drop into the Loyalsock at the source of its main branch it would float in a south-westerly direction for a distance of nearly sixty miles before it reached the mouth of the big stream; and since the Loyalsock descends rapidly, from its beginning far back in the mountains to its ending at the Susquehanna, the voyage would not be of long duration. In its journey the chip would pass by the Haystacks and Buffalo Rock, tall conical boulders in mid-stream, and by Pilot Rock and Red Rock, feared by the logging and rafting crews. It would hurry down Cape Mill riffle where there is now no Cape Mill, over Cove Dam where there is no longer any dam, and through Crooked Riffle, which the ice floods have made straight. It would, however, certainly have had time to observe the beauties of the mountainsides, and of the intersecting valleys as it floated leisurely through such long deep pools as the Ketchall, the Gulf, the Mountain Hole, the Mud Pot and the Grass Flats. Never in its long length does the Loyalsock lose touch with the mountains. Always on one side or the other its current washes boulders that frost and rain have loosened from the mountainside above. Sometimes these mountains crowd the stream so close that it must struggle with much clamor to force its way through. Again they draw back a few rods and make room for a sugar bush, a little farm or a mountain hamlet. At one time in its history the lumbermen vexed it sorely. They stripped the sides and tops of its mountains of their pine and hemlock, built great splash dams to create artificial floods and sent the primeval forests hurrying down to the big mills at the mouth of the creek. There followed a period of forest fires, depleted water sources and shrunken tributaries until at times the Loyalsock exposed its very vitals to the gaze of the passerby. But the Loyalsock is coming into its own again. The lumbermen have moved on to new fields of destruction and the bark peeler and the log driver are known only as memories. The deep black pools made by the discharge of their waters are all that remain of the splash dams. Nature is clothing the mountain tops and the valleys with a second growth of timber, and the state foresters, from their high look-outs, guard it against the devastating fires. Again do buck, doe and fawn drink at its edge, fishhawk and heron follow its winding course in search of food, and pine and hemlock see pictures of themselves in its placid pools.

It is an instinct of the brook or speckled,



HON. CHARLES LOSE

trout to push upstream in the spring of the year. This movement begins as soon as the snow water has stopped running and it continues until all of the trout have reached the places where their fall spawning will be done. In the Loyalsock the trout begin to move early in April. Old fishermen used to say that the trout waited for the first deep roll of thunder as their signal to start. At this time they leave the big deep pools where they have spent the winter safe from the dangers of ice floods and go up into the riffles at the heads of the pools. At first they ascend the riffles for only a short distance but later they will be found throughout the entire length of the riffle occupying some vantage point made by a big boulder, a sunken log or a projecting root. It is when the trout are in the riffles that they offer the angler the best sport. They are then always on the lookout for the spinning minnow or the dancing fly and when hooked in this swift water they make a furious fight before they permit themselves to be landed. About the first of June when the volume of water in the Loyalsock begins to shrink and to grow too warm for their comfort, the trout leave the riffles for the cool springs in the bottom or on the edge of the creek and for the mouths of the tributaries where quantities of cold spring water are entering the main stream. Lying in large schools in this cool water, the trout feed only in the evening or at night and they can be tempted by nothing but flies. On rare occasions when a fog is on the water or the day is dark they may be induced to break their rule and give the fly fisherman some good sport. Almost invariably there comes a flood in June and the trout take advantage of this high water to continue their journey to the head waters of the Loyalsock or up its tributaries where

the water is always cold and pure. Generally each trout seeks the side stream or branch where it was born and in which it spent its trouting days. Only an impassable dam or a complete change in the stream will prevent this. Sometimes a few of the largest trout remain in the Loyalsock throughout the summer. Then when the cool fall nights have lowered the temperature of the water they seek the shallows and build their spawning beds. The squirrel hunter along the Loyalsock sometimes sees several pairs of these great trout standing vigilant guard over the places where their offspring will be brought forth. But the rank and file of trout that have spent their winter and spring in the Loyalsock are not satisfied until they have settled themselves in the cool waters of some tributaries where their young may be brought forth and raised in smaller and less turbulent waters than those the Loyalsock offers. Even the smallest branches of the tributaries have their quota of spawning trout.

The Loyalsock has no fewer than a score and a half of tributaries, a number of which are large enough to be called creeks. If these tributaries could be placed end to end they would form a stream that would reach from north to south across the State. Including the Loyalsock, these streams drain a mountain territory of more than five hundred square miles. As in the case of the Loyalsock, these tributaries have all felt the heavy hand of the lumberman and many of them have known splash dams and log drives and their aftermath. Still, even at the present day, there is not one among them that does not contribute each fall its share of trout to the larger stream. When the November rains begin to fill the streams, the trout that went forward in the spring commence to fall back in search of bigger and deeper waters. The largest trout go first into the Loyalsock where they keep company with the chub and suckers until the spring floods start them forward and upward again. Among the names of these tributaries are such old and significant ones as Elk Creek and Big Bear Creek, Wolf Run and Panther Run, and Dry Run and Double Run.

If an angler set out to seek the source of Elk Creek he would find it in a pond around the shores of which the elk trod a century and a quarter ago. If he started to explore Wolf Run it would lead him finally into a rocky mountain defile where the wolves held forth in their day. If he left the Loyalsock to ascend Dry Run he might walk the bed of the stream dry shod, for half a mile, to where the stream sinks to reappear in big springs at the edge of the Loyalsock. It is a stream with a head but no mouth. In each of these streams the angler, as he goes forward, will finally come upon a waterfall whose counterpart may be found in most of these mountain streams. The waterfall may be six feet high and it may be thirty, but always below it there is a deep dark

pool in which a big trout lurks. Catch this trout and another one takes its place in a few days. The water may come down the steep incline of the fall in a mad rush, or it may fall perpendicularly over a projecting floor of rock; but in neither case does it appear to offer an obstacle to the trout, for they are always found above the falls.

In such a stream as Double Run the angler will find the hemlock trout, a dark colored trout, against whose steel-blue sides the row of scarlet spots fairly glow. It is a speckled trout that has taken its color from the dark under the hemlock roots. Along such streams as Big Bear Creek the angler will find small swampy runs in which, if he cares to investigate, he will find many baby trout not yet capable of taking care of themselves in the larger and swifter streams. Each tributary of the Loyalsock has its tributaries and these have their own to the second and third generation. It is these little streams, in which small trout thrive and multiply, that make and will continue to make the Loyalsock a Trout Stream.

There were four well-known houses of entertainment along the Loyalsock in the days when it and its tributaries held such an abundance of trout as to attract anglers from a distance. These places were Snyder's, in a little village at the forks of the creek; Snell's, at the mouth of Elk Creek; Speaker's a big comfortable farm house on the bank of the Loyalsock, opposite Hillsgrove, and Wells', near the mouth of Big Bear Creek. At Snyder's, the angler had the choice of the wild, rough, noisy East Branch, the smoother, quieter Little Sock, or the beautiful woodsy Lick Creek. Then after a hard, and probably successful, day's fishing the angler could spend a comfortable and pleasant evening in Snyder's lounging room where the local anglers from miles around would gather nightly to exchange unusual fishing experiences. Two sisters presided at Snell's and they were tireless workers. They seemed to welcome an angler's request for a daylight breakfast and they would wait supper for him till the stars were shining. They were famous cooks and their corn cakes, home cured ham and fried trout were good beyond compare. Their great feather beds were so comfortable to the tired bodies of fishermen that sometimes a Gabriel's trumpet was required to rouse one in the morning. It took the angler thirty minutes to go from Snell's to Hoagland's Branch where he found a stream made up of a succession of low falls and round deep pools in which many fine trout waited for bait or fly. It is a rocky stream whose sides are ground full of pot holes of all sizes and depths. The great open fireplace at Speaker's was one of its chief attractions. Around this in the cool spring evenings, tired anglers would gather after supper to tell of a big trout on Huskell's Riffle or at the Ketchall. Outside the Loyalsock would keep up a contented murmur, a whippoorwill would sit on a fence post and fairly rend the air with its clamor, and a big owl would hoot its complaints from the woods behind the barn. Speaker himself would sometimes join the party and tell of adventures in the lumber woods or on the rafting floods.

At Wells', an old covered bridge spanned the Loyalsock and on its stringers boys often lay to snare trout in the waters below. Two



NESSMUK (CHARLES LOSE) TRIES A TROUT POOL

low stone walls confined the approach to the picturesque old bridge and on these there was a nightly gathering, during the fishing season, of residents and non-resident fishermen. From there they could watch and pass judgment on the work of a late fisherman in the long riffle above the bridge, or on one that was trying a few last casts at the foot of the riffle just under the bridge. For years Wells' was at the headquarters, in the trout season, for city anglers from many parts of the State. It was above and below Wells' for a few miles in each direction that the Loyalsock offered the finest fishing. Some of these anglers continued their annual visit to the water they loved until they became so old that they needed assistance in getting along and across the stream. These men, no doubt, prayed that when they died they might be permitted to go up to Wells' and fish the Loyalsock instead of to a place of harps and angel wings.

Mo Wells, the proprietor of the place, was himself a fine fly fisherman, as well as an ardent one. Almost every evening after he had seen to the comfort of his guests, he took his fly rod and boat and drifted down the pool that began at the bridge, and ended at Buffalo Rock, a half mile below. Much cold water flowed into this pool and in it the trout collected when the hot days had come. Mo sometimes caught between dusk and dark more and finer trout than some of his guests had caught the entire day. On the railing of the Wells' front porch there may still be seen the notches that mark the length of some of the largest trout caught in that part of the Loyalsock. A twenty-inch brook trout was not unusual in those days.

In its long history as a trout stream the Loyalsock bred many skilful fishermen. These were of two kinds; fly fishermen and minnow fishermen. Its large volume of clear, cold water, its swift riffles alternating with long, quiet pools, its wide gravelly beaches

which permitted a clear back cast and the landing of a trout without the aid of a net, and the size and fighting qualities of its trout made the Loyalsock an ideal stream for the fly fisherman. Some fly fishermen of exceptional ability have been born and reared in humble homes along its banks. They fished for trout from the time their mothers first fitted them out with a bent pin, a piece of thread and a shoot from a lilac bush, and they continued to fish until rheumatism and old age cut them off from their heart's desire. They acquired, in time, great knowledge of the stream and of the trout, and much skill with the rod. Much of their fishing tackle was often home-made, but always effective. There would be the rod with an ash butt, a middle joint of hickory, and a whalebone tip. It would weigh more than three ounces to be sure, but it would be long enough to permit casting against a stiff southwest wind. The line was generally of horse hair twisted with the aid of two quills. It was without knots and had no tendency to kink or tangle. It was the original tapered line. The fur of animals trapped or shot and the feathers of birds and domestic fowls furnished materials for the flies. A peacock's tail feather was a prize for the fly maker and the end of a squirrel's tail made a good hackle. The flies which were generally large ones, were usually carried in the hat band. In some of the anglers' pockets there were always materials out of which to construct a new fly to meet the hours' requirements and imitate a fresh hatch of flies. The city angler, with his shining outfit, not infrequently expressed pity for one of these local fishermen but when he saw the man wielding his long rod, handling a hooked trout, or exhibiting his catch of fish, he was likely to change his attitude.

I had several times, myself, examined with some amusement Old Tom's outfit where it hung on some nails inside his little sawmill.

The rod was in one piece and the reel was made from a big spool. Then one evening just as the sun dropped over the crest of Cove Mountain to the west of the valley, I came upon Tom fishing at the head of his mill dam. At the instant the sun disappeared the trout began to rise, as Old Tom knew they would, and in the following hour Tom gave me such an exhibition of casting with his old rod, and of hooking and landing trout, as I had seen before only a few times in my life.

Another old fishing expert of the Loyalsock, whom I sometimes stopped to watch, could cast from the back of his horse. Just in front of his little farm house there was a strong deep riffle beloved of trout. Into this the fisherman would ride after supper and while the old horse stood patiently in the middle of the stream the man would cast over the swift water below him. A trout that rose in such water would strike hard and be firmly hooked. Then the horse would be driven to the shore and the fish landed. The first time I watched this procedure I wondered how the fisherman could cast below him when the horse was headed the other way, but I later found that the man could cast equally well with either hand.

Uncle Jim was doubtless the best known minnow fisherman of the Loyalsock. He had fished the stream for fifty years, and he knew it when its valley was thickly coated in pine and hemlock, when the springs were full and its waters remained cool throughout the year, and when the catching of a three-pound speckled trout was not a rare occurrence. Uncle Jim's knowledge of the stream was both intimate and complete. He knew the bottom as well as the top and sides of every riffle and pool from the big rock in the East Branch where he had once caught seventy-five trout to the Cold Springs forty miles below where one spring morning he had fought and conquered a four-pound brook trout. His knowledge of the stream extended, of course, to the trout it contained. In a stream as large as the Loyalsock trout are capricious. They are quickly affected, favorably or unfavorably, for the fisherman, by a turn of the wind, a change in the sky, or a slight rise or fall of the stream. They frequent in numbers certain parts of the stream and shun other parts that appear equally favorable for them. They feed in a lively manner at one hour and not at all at another hour.

All of these things were elementary knowledge to Uncle Jim, who always had been a keen student of the water and fish if not of books. Let him catch and clean a trout and he would, with much certainty, tell you on which part of the riffles the trout were to be found, on what they were feeding and what sort of appetites they had. He was the one minnow fisherman of the Loyalsock to whom the local fisherman offered little advice or information. They knew that he knew without being told where and how he ought to fish.

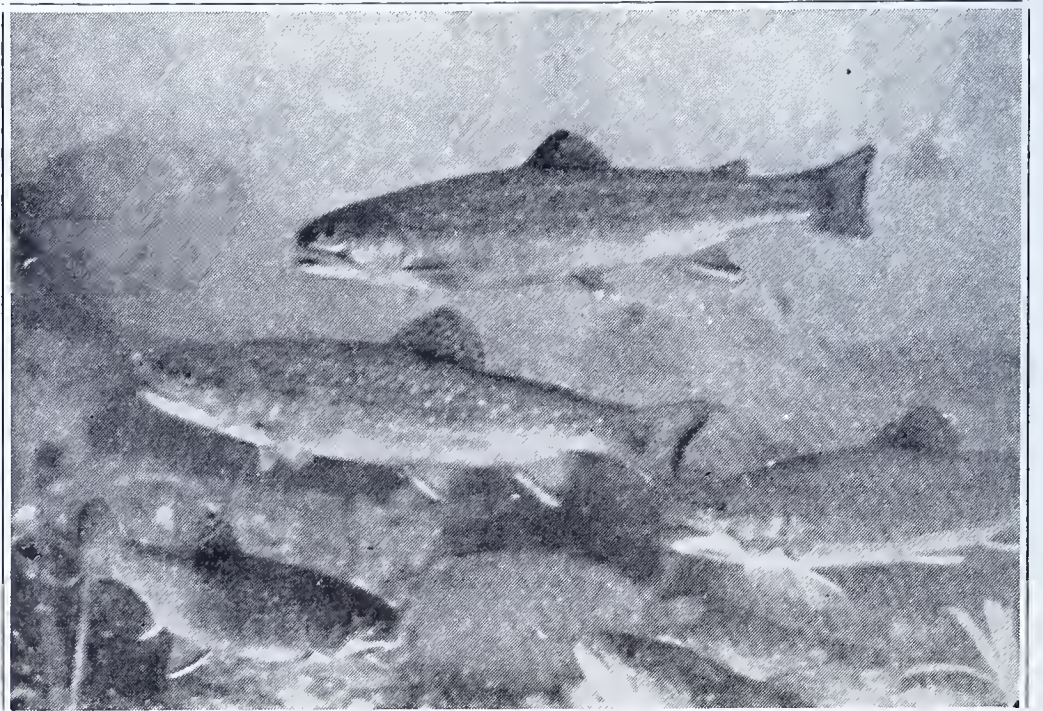
Uncle Jim's skill as a minnow fisherman was in no way inferior to his knowledge of trout and trout waters. His way of using a spinning minnow as a lure for trout had come down from the time of good old Izaak Walton, but it was still an effective method, the most effective method when big trout were to be caught. Uncle Jim's minnow al-

ways whirled smoothly and rapidly just below the surface of the water and Uncle Jim always saw the trout that rose to his bait. Seeing the trout rise to take the minnow no doubt added to the pleasure of his sport just as it adds to the pleasure of the angler with the fly. When a trout has taken a bait it immediately sinks to the bottom and begins to swallow it. It is at this point that patience is required, for until the trout has swallowed the minnow and started to move away there is no certainty of hooking the fish securely. With the tip of his long, sometimes stiff cane rod raised so that the line was taut between the tip and trout, Uncle Jim would stand and wait patiently for the proper moment to strike.

His handling of a hooked trout was also a superior performance. The length of Uncle Jim's rod always contributed as much to the handling of a fish as it did to the hooking of it. No matter how swift or how rough the water or how strong the trout, Uncle Jim was always in control. Sometimes he followed the struggling trout and sometimes he held it, but finally when it was completely exhausted, his long rod, to which there was no reel attached, was quite likely to slide it upon the beach at some point of vantage to which Uncle Jim had all the time been directing the fish. A city angler who saw Uncle Jim start out one morning with his big rod, asked a bystander who the old chap with the cornstalk pole was. The bystander replied that it was Uncle Jim, the best fisherman of the Loyalsock. The city angler seemed to doubt the latter part of the statement but he had his doubts completely removed when Uncle Jim returned that evening with more big trout than the young angler had ever seen before. Uncle Jim's big fish seldom got away. They were hooked so firmly and handled with such skill and precision that almost invariably they went finally into his creel.

Sometimes when Uncle Jim was contend-

ing that the Loyalsock was superior to all other trout streams, he would refer to the day on which he caught between Sandy Bottom and Wells', a distance of three miles, fifteen trout whose combined weight was twenty-three pounds. Each one of these trout, he would declare, was possessed of fine fighting qualities and was handsomely shaped and beautifully colored. Among them he said there were three which together weighed a trifle more than nine pounds. The first of these he caught early in the morning at Ted's Root where a steep riffle runs into some deep water at the head of a long mill dam. This trout took the minnow when the rod was extended and the line stretched. This prevented his giving the fish enough line to make it certain that the trout would be well hooked. But he did the best he could in the circumstances, and when at last he pulled he decided that the trout was securely hooked. The trout was however, so big and strong that at first Uncle Jim could do nothing more than follow it and it led him into some pretty deep water. Finally he turned it and from that point he was master of the situation. It was still a hard fight, but in the end he towed it out on a low, sandy beach where it lay completely tired out. The second large trout he hooked below a large boulder in the swift water of the Mud Pot Riffle. He had seen this trout rise to take a fly, and he knew just where it lay and something of its size. As his minnow came spinning past the boulder the trout took it with a rush and then dropped down below the boulder again. This time Uncle Jim had plenty of chance to wait and when he pulled he knew that his minnow and hook were in the trout's throat. It was a rough, swift piece of water in which to fight a big trout, but Uncle Jim had the advantage of a clear, level shore, and of this he made the most, finally landing the big fish on a low, gravelly beach, just below the foot of the riffle. It was nearly dusk when he hooked the third big fish



YEARS AGO, BROOK TROUT AND NOT BROWNIES,
PREDOMINATED IN THE LOYALSOCK

under the covered bridge at Wells.' A fly fisherman who was casting at this point had seen the fish rising but he had too little faith in his light tackle to try conclusions with a three-pound trout in such strong water. Several men stood in the road at the end of the bridge to watch Uncle Jim show the fly fisherman how the trick was done. When the trout took the minnow it dropped to the bottom where it lay for several minutes before it started to move off. When Uncle Jim pulled, the trout did an unusual thing for a speckled trout. It jumped out of the water again and again. But Uncle Jim had few misgivings and after a short, sharp fight he landed the fish. It was nineteen inches in length and weighed three and one-quarter pounds. This day's work showed Uncle Jim's skill as a fisherman as well as the merits of Middle Creek as a trout stream.

In later years the small-mouth black bass shared the waters of the Loyalsock with the trout. The bass came from the Susquehanna into which they had been introduced late in the sixties. They left the river about the first of July of each year, after their spawning season was over, and ascended the creek in large numbers. They rarely penetrated the cold mountain tributaries of the Loyalsock but were content to remain in the pools and the less rapid and warmer water of the main stream. Here they chased minnows and leaped for insects until they became fat and their flesh almost as sweet as that of the trout.

Toward the end of July, when he had begun to tire somewhat of the trout, the fisherman took a lively interest in the bass. He would find them in the evening at the foot of the pool or head of the riffle where, with flies or a spinner, he would make a killing among them. Sometimes with helgramites, lampreys, or riffle chub and a heavier rod he would spend the day fishing some long, deep, rocky pool and catching such a string of bass as would gladden the heart of any fisherman. Occasionally he would anchor his boat in the middle of a deep black pool where he knew some big ones lurked and wait until he got hold of one that tested his skill and the strength of his tackle. From the middle of August until the middle of October the bass fishing was at its best and few fishermen went home empty handed.

When the katy-dids began to shrill on the mountainside above the stream in the evening and an occasional frost to appear in the early morning, the bass started on their leisurely journey down stream. For some the journey ended in a deep pool or long mill dam where they spent the winter among the trout and suckers. But the greater part of this finny tribe pressed onward by easy stages, halting below each mill dam or close to some log cribbing to gorge themselves on the minnows collected there. The fisherman who found them in these places always caught the limit of strong, heavy bass in all too short a time to suit him. Finally the bass reached their ultimate goal, the river, and here on their stored up fat they passed the winter in a state of semi-hibernation and the Loyalsock saw them no more until the ruffed grouse had nested and brought forth her brood, and speckled trout were seeking cold water.

SCORE ANOTHER FOR ED OLINGER

Just when we were scanning the fishing news horizon for a nice juicy fish story, along comes George Zimmerman, Secretary of the Lehigh County Fish and Game Protective Association, with a pippin. Of course, that is simply another way of saying that it concerns Ed Olinger whose most recent contribution in this line was right with the best. Writes George:

"Ed Olinger, Allentown wire worker and a member of the Lehigh County Fish and Game Protective Association, insists that there has never been a fish story so tall that there isn't one that is taller, citing an experience that he had last summer at Peck's Lake, his favorite fishing haunts, as proof of his claim that anglers do not stretch the truth to the extent that skeptics assert. Olinger tells this one without the 'bat of an eyelash!' hence it has all the earmarks of veracity.

"Anyway, he says he was fishing in the lake and bye and bye, caught a 24-inch pickerel, which in due course was hauled into the boat. In the process of admiring his catch Olinger recognized the fish as the same one he had caught six years before when it was only 12 inches long and was thrown back because of its small size.

"How do you happen to know that this fish is the same one you caught years ago?" inquired a friend.

"By the finger prints, my boy; by the finger prints," answered Olinger, who, it should be explained, is a native of Luxemburg, and had some experience in police work in the old country."

CATCHES BIG TROUT ON WINGED HELGRAMITE

One of the largest brown trout reported taken in Pike County waters last season was caught on a winged helgramite, or young dragon fly, according to Warden Frank Brink of Milford. James Valerschamp of Bushkill, 15 years old, made the catch. His brown trout measured 22½ inches in length and weighed four pounds, six ounces. It was taken in the Big Bushkill Creek at Bushkill bridge.

Peck's Pond yielded a catch of 28 fine pickerel to L. F. Kemmerer, and son, and F. A. Schrecher, of Leighton, R. D. No. 3.



Seth Says

Well sir, durned ef I didn't listen into a hot argyment down to the store t'other night. I reckon thar's more talk this year 'bout bass fishin' in these parts then in a long time.

We been a-ketchin' a heap more bass in the crick then last year an' some gol-wallopin' big fellers at thet. Anyhow, the boys started argyin' 'bout jest why a bass seems ter fight harder'n a pike. Sam Jenners, he's a right smart hand at skitterin' fer pike, an' figgers a big pike ain't a mite behind a bass when it comes ter scrappin'. Now then, Jerry Tims takes a shine to the bass an' it so happens he's on hand to stand up fer his pet. So thet's how the argyment started. Most o' the boys jest figgered it was about a draw.

Come an' think about it, did ye ever take a close look at a pike laid alongside a bass? Jest the way I look at it, I reckon the whole answer's in the way they're built. Jerry Tims an' me sees eye ta eye when he says the bass is way ahead o' the pike as a fighter.

Now then, the pike is built long an' racy. He ain't got the broad sides o' the bass to help him fight agin the pull o' the line. His fins is soft, not spiky-braced like them o' the bass. He's more a twisty kind o' fighter than the bass. His jaws is soft an' right often ef he twists about the top o' the water, he'll pull loose o' the hook. Nature jest ain't give him the fightin' build o' the bass. But jest don't git the idear thet a big pike ain't a right good fightin' fish. Ef ye snag inter one o' them broad pike of maybe 22 inches, ye'll have yer hands right full a-landin' him.

I jest got one big thing agin' a pike, an' thet's the slow way he takes the bait. Now then, a bass, when he hits starts a clippin' away fer fare-ye-well. There ain't no niblin' bout the ol' feller generally. A pike, he's some different. More'n once, down by the crick, I've had a pike kill maybe four minnies jest fer cussedness, an' then not git him. Mebbe, every so often, bass'll kill bait fer the sake o' killin' it, but pike is much more thet way, I figger.

Well now I'll be lettin' ye know 'bout how our fishin's goin' shortly. An' I sure wish the boys a lot o' luck in their fishin' for fight-ter-the-finish bass.

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Nature Along the Water

By N. R. Casillo



BIRDS ARE ALWAYS MORE PLENTIFUL ALONG THE WATER.
NEST AND YOUNG OF KINGBIRD

MANY are the types of fishermen. There is the fellow who cares only for the fish by the pound or who gloats over its over-all length. He does not see the beauty of color or form of his catch no matter what it happens to be. Then there is the angler who bewails his ill-luck for being out on a day that the fish were not hitting and says that he might as well have stayed at home. The dry fly purist may go and carefully place each cast and talk about a particularly long or well-placed one; how he slid his fly under the leaning tree or dropped it between the two rocks at the head of the pool. And there is yet another type who goes forth expectant and anxious; who gives his quarry a chance and is never annoyed because one or more gets away. Who is a lover of the water and all of its surroundings, and sees all that is in it and along the stream; who cares not at all how few fish he catches and does not load his creel even if he could. He thrills at the ethereal song of the hermit thrush liquidly flowing from the cool depths of the forest; and smiles good-naturedly when giving the right-of-way to an apparently indifferent mother skunk leading her brood along the banks in search of the succulent crayfish.

The fisherman more than any other sportsman has opportunities to pursue the study of several branches of science, not expertly, perhaps, but with enough zest to arouse his interest and increase the enjoyment of his pastime. He has need to exercise his knowledge of zoology, botany, geology and their various ramifications, and not without a

practical outcome from an angling viewpoint.

The life along the stream consists of several classes. The stream itself is, of course, a matter of wonder and study. Vegetation in the water and along the banks presents an interesting and ever-varying picture. Stream life of fish, crustaceans, mollusks, reptiles and insects should be observed and mentally catalogued. Birds are always more numerous along waterways than elsewhere so that the opportunity here is practically limitless. Insects are studied not only for their zoology but to assist in angling knowledge. In fact to the nature lover the water presents more of a practical opportunity for education than all woods and land.

Little does it matter if the angler uses a cut pole or expensive bamboo so long as the true spirit is in his heart. You as a boy with your inexpensive outfit doubtlessly experienced joys that were not to be compared with those of later years.

In bygone days, night fishing expeditions for bullheads were great events in my life. The call of whip-poor-wills, the booming of bullfrogs, and the numerous, furtively mysterious sounds issuing from the dark cover of the banks surrounding the "pout" hole, all combined to make a mere experience a great adventure. And the path home through the gloom of alders and pines never failed to produce a tingling spine. To me the memory of those night sounds are more vivid than the huge catches that we made.

Botany is a beautiful and useful study and the fisherman picks up much knowledge

of it along the water. The flowers of spring and summer add to the trip and the intimate acquaintance with the edible varieties of plant life helps the larder at camp. Specimens and a notebook will soon acquaint one with the native forms of plants, and not infrequently a new specimen will spice an otherwise dull trip. Many of us look upon plants as so many weeds. We give a passing glance to the rank growth, grotesque or interesting leaf and beautiful or curious flower and pass on. Little do we suspect that in many of those so-called "weeds" are contained ingredients that have been used for countless generations by ancient civilizations or by uncouth, untutored savages, for the relief of sickness or injury. You can readily see that we unknowingly trample countless medicinal plants on every fishing holiday; then when the need for an emergency remedy arises we know not where to turn. Of what use is gold to one who does not know its value?

Many of the varieties of fish live in the ordinary river. An attempt to classify the various species and sub-species in the average stream will result in a surprise. Not unusual is it to have a specimen presented for the first time to old timers, and many are the fish that aside from some purely local name are unidentified in a community. An example is the partly blind catfish found in the caves about Conestoga River in Lancaster County. In this connection I am reminded of a trout stream in Forest County that has a long, smooth chute of granite at the head of one of its pools. Whenever visited the pool never failed to yield some trout with tails and fins worn to shreds and often entirely missing. Those mutilated trout told a story, as one can readily perceive. The natives living in the vicinity of the pool call them leaping trout because they have often been observed attempting to ascend the chute. Likewise there must be a reason why a bass is called a trout in the south, and why a bullhead in this state is called a horned pout in New England.

The muskrat, beaver, otter, mink and all mammals that live at the water's edge are seen as well as the upland ones that come to cross or drink. One of my biggest thrills was experienced while I was wading a trout stream. In the midst of a cast I saw a clump of ferns at the edge of the creek move unnaturally. Suddenly a mink slithered into view and slid oilily into the water. In less than a minute he reappeared at nearly the same spot hanging on to a trout larger than any I had caught. At my yell he released the dead fish, threw a silent snarl in my direction and then disappeared into the undergrowth with his prey.

Just a month ago we were making our way down Mill Creek in Elk County. George and Harry Short, my companions on that occasion, are inveterate dry fly enthusiasts who pursue their sport with the zeal of zealots. It was that hour of evening when fishing is best, when Harry, who was fishing well ahead, suspended his beloved sport long

enough to cautiously retrace his steps in order to inform us that beavers were working at a point downstream only thirty feet from where he had been standing. Quietly all three of us made our way to the spot and watched two wild beavers going about their work as unperturbed as you please. Here in my home state I observed something that I had never seen on my many trips to the Northern wildernesses. And then to climax the evening, on our way back to camp we saw a deer and literally rubbed the nose (with my landing net), of a young porcupine. Our creels for the day were light but our satisfaction was full.

Birds and water are inseparable, and the most exciting finds are nearly always made along a stream or in the near vicinity of one. Those that the careful observer is apt to encounter are too numerous to mention individually. Warblers, blackbirds, flycatchers, waders, thrushes, woodpeckers, aquatic fowls and the nightjars are the families that live close to the water, probably because of the abundance of insect life and cover.

The only time that I ever saw a singing hermit thrush at close range was while I was eating lunch along a woodland stream. Like a wraith it came out of its forest retreat, alighted on an overhanging branch and poured forth its notes of liquid beauty. I sat spellbound through the entire cantata. On another occasion I was startled by the mew of an alarmed grouse causing me to pause in my fishing and wait motionlessly. In a few minutes a female grouse emerged from the cover of some low-hanging hemlocks, anxiously peered in all directions and then led her brood of ten to a sunny rock for the noonday siesta. Then at the crack of a twig under one of my straining feet pandemonium broke loose. In spite of the fact that the youngsters were scarcely two weeks old they could fly like young bullets. For a moment the air was filled with whirling birds hurtling in all directions. During this interval the mother fluttered and dragged her wings in a most helpless manner attempting to draw my attention from her young.

A few minutes after my apparent departure the mother anxiously strutted to the edge of the undergrowth and summoned her young with a number of low querulous calls. Almost instantly they emerged from "impossible" hiding places under leaves, bits of wood and what-not.

The fly fisherman tries to study the insect life of the stream he is fishing. He may do it intelligently or otherwise, depending upon his knowledge of the subject; and if he has even a fair imitation of the insect in hatch and presents it skillfully, he will nine times out of ten outwit his wary quarry.

Not so long ago we arrived at the newly opened Spring Creek Trout Raising Project forty minutes before closing time. In the semi-darkness of a cloudy evening we hastily tied on our best flies and went to it. Not one fish rose to our offers although feeding trout were dimpling the water everywhere. We feverishly changed fly after fly but without success. Finally, Dr. J. F. Blecher of Middletown, the entomologist in our group managed to catch one of the minute insects upon which the fish were avidly feeding. He showed it to us and prescribed our tiniest Black Gnat. It too proved useless. Twenty minutes before the siren

sounded, the doctor took out his scissors and trimmed the already small fly until there remained only a piece of the body barely one-sixteenth of an inch long. We did the same and had immediate results with it.

One of the chief reasons why Nature is neglected by many as they wander down their favorite streams, is because they knew so little about it. One need not be an expert in all of the finer delineations of the out-of-doors in order to get the most out of it. Just an understanding attitude, a pair of keen eyes and an alert mind is the equipment needed in order to derive the utmost from those things that are so vitally a part of fishing. Remember that even catching fish is a tiresome pastime if they are creeled too easily and often. Give a thought and a moment to your surroundings in between. If "in between" is too long and infrequent, then so much the better, for the day will not be spoiled by an empty or light creel. However, it might be well to add that the understanding one seldom returns without fish.

DESTROYERS OF FISH

(Continued from Page 7)

V is a dull wedge-shaped head. Two glassy eyes are set well forward, not far from the blunt snout of the creature. This watersnake, over 40 inches in length, ranks as the outstanding enemy to fresh water fish life, for numerically it is the most abundant of fish predators on Pennsylvania streams, ponds and lakes. During the day, the snake has sunned itself on the surface of a great rock. It has not, in fact, been active to any extent for 24 hours, having just prior to that time consumed a large bullfrog captured among the lily pads. While in the process of digestion, the reptile apparently lost its usual alertness, lapsing into a sort of coma. Now, its sinuous, graceful swimming indicates a rapidly returning appetite. The golden brown markings stand out sharp'y on the body of the snake, for recently its skin was shed and is now lying in white, almost transparent folds, in a little eddy near shore.

Presently the V disappears from the surface, and the watersnake directs its course toward the lee side of a flat rock on the stream bed. In the crevice beneath the rock a large stone catfish is cornered. The fangs of the snake fasten securely in this now practically helpless prey, and in a short time, the catfish is being dragged from the water. Both species of catfish, bullhead and stone, are predominant items in the fish diet of watersnakes in this stream. Perhaps it is because they are captured more readily in their rocky lairs. So adept is this reptile in its fishing methods that many more active species, including suckers, fallfish, and even on occasion, pickerel or bass are captured.

Another important forage area for the watersnake is the shoreline. Frogs, tadpoles and lizards from this portion of its range add variety to its diet. Its audacity at times is amazing. A live net containing fish will lure it to the attack even while a fisherman is standing close by.

The snake now engaged in swallowing the catfish is a female. In August she will probably bring forth from 30 to 40 young. Born alive, these young are active little creatures almost from the instant of their

birth. Fortunately for the supply of fish, they are preyed upon by many birds and animals, while even fish will destroy them. When uncontrolled, however, these reptiles soon become so abundant as to constitute a serious menace to fish life.

In Closing—The Salamander

A repulsive-looking creature, grayish-black in coloration, crawls from beneath a rock on the stream bed at nightfall. As an enemy to fish life, the status of this salamander, otherwise known as mud-puppy, water-dog, hellbender, or creek alligator, is open to question. A spawn-eater? Certainly, if it has the opportunity; but the wall-eyed pike, pickerel, yellow perch and sucker, fishes that deposit their eggs at random and then leave them, spawn in early spring when the water is still too cold for much activity on the part of these ugly denizens of the stream; the black bass, sunfish and rock bass spawn during the time of the year when salamanders are active, but so vigorously do these species defend their nests that it is questionable whether the salamander secures many of the eggs. On the other hand, specimens containing fish spawn have been found; more important, salamanders with minnows, crawfish and stone catfish in their stomachs have been caught. While there is reason to believe that these creatures are scavengers to some extent, their inroads on the supply of live forage in waters they frequent and taking of fish spawn, when an opportunity is presented, cause them to rank with other species destructive to fish.

In appearance, the salamander making its way over the bottom of the stream is grotesque. Its flat stubby head, small legs, slightly bulging rounded body with rough folds in the skin, and long tail present an appearance immediately arousing a feeling of repulsion. It is a night feeder, and many of its kind are taken by anglers stillfishing for eels or catfish. Bass fishermen using live bait during the day also occasionally hook a salamander. Concerning it, David C. T. Swanson of Polk writes:

"That repulsive looking creature, the hellbender is a very common salamander in parts of the Allegheny and its tributaries. While to many fishermen, the thing to do when one is hooked is to cut the line and to many others he is a serious menace to fish and should be exterminated, to the nature lover he is an interesting specimen. He is not only the largest salamander in the western hemisphere, but his only near relative lives in Japan. This relative grows to a length of five feet or more and is considered very palatable by the natives. As my brother Luther makes a study of snakes and amphibians, and as I am interested in ichthyology, we happen to become acquainted slightly with the hellbender and decided to find out for ourselves if he was an enemy to fish, therefore, to the fisherman.

"In three trips after hellbenders we limited ourselves to the Big Sandy in Venango County. Our first trip was to secure some specimens for the Carnegie Museum Collection. On the trip we caught eight adult specimens ranging from 16 inches to 20 inches in length. One of these appeared to have been dead for some time. We had these specimens two days (alive) and in that time they had regurgitated 35 crawfish. Our next trip was on June 25. We quit at 27, ranging from 15 inches to 22 inches in length, and from a rusty red to a dirty gray, al-

most black, in color. No vegetable matter was found in any of them. Three had empty stomachs, all the rest had the remains of from one to five crawfish. Small stones were found in three specimens. One had eaten a sucker about four inches in length, another a shiner of about two inches.

"The female hellbender lays her eggs around the first of September in long bead-like strings, anywhere from 400 to 900 eggs. I have used these eggs for bait and caught fish on them. It might be of interest to know that the male stands guard over these eggs, and consumes quite a few of them, but as he is such a slow eater, many of them are hatched out before he can consume all the eggs."

The sluggish salamander completes the list of natural enemies to fish that are outstanding in Pennsylvania inland waters.

The mink and raccoon, animals that prey on fish, may be ranked in a similar category to that of fish-eating birds. During periods of low water, mink and 'coon may kill many trout in mountain streams. The former, however, is now comparatively scarce, while the raccoon ranks as a slight menace when compared to the watersnake.

Of course, there are other destroyers, such as the tiny but voracious water tiger, and fungus, a fatal disease that attacks an injury to the skin of a fish sustained when water temperatures are high. In this rather brief discussion, only fish predators commonly observed by fishermen during their trips astream have been considered.

TROUT, YELLOW PERCH AND PIKE PERCH DISTRIBUTED IN MAY

Brook trout, from 7 to 11 inches in length, brown trout from 6 to 12 inches, rainbow trout, 11 and 12 inches, pike perch or wall-eyed pike fry and yellow perch fry featured distribution of fish from the Commission's hatcheries during May. Brownies stocked numbered 40,356; brook trout, 19,656; rainbow trout, 1,325; pike-perch fry, 25,125,780; and yellow perch fry, 297,278,650. Over 76,000 lake trout fingerlings were also released.

The following waters were stocked in the various counties:

Adams—pike perch, Conewago Creek; yellow perch, South Branch Conewago Creek, Bermudian Creek.

Allegheny—pike perch, Allegheny River; yellow perch, Allegheny River.

Armstrong—pike perch, Allegheny River; yellow perch, Allegheny River, Craig Run, Buffalo Creek.

Beaver—pike perch, North Fork Little Beaver River, Brush Creek, Little Beaver River; yellow perch, North Fork Little Beaver River, Brush Creek, Little Beaver River.

Bedford—pike perch, Lake Gordon, Raystown Branch of Juniata River, Brush Creek, Dunnings Creek, Bobs Creek; yellow perch, Lake Gordon, Raystown Branch of Juniata River, Brush Creek, Dunnings Creek, Wills Creek, Bobs Creek, Woodbury Dam on Yellow Creek, Thomas W. Coon Lake.

Berks—yellow perch, Ontelaunce Lake on Maiden Creek.

Blair—pike perch, Williamsburg Dam on Frankstown Branch Juniata River, Frankstown Branch of Juniata River, Williamsburg Dam on Frankstown Branch Juniata River, Frankstown Branch of Juniata River, Brush

Run; brown trout, Frankstown Branch Juniata River.

Bradford—trout, South Creek; pike perch, North Branch Susquehanna River, Chemung River; yellow perch, North Branch Susquehanna River, Herrickville Rod & Gun Club Pond, Lake Wesauking, Mountain Lake, Nephawin Lake, Barnes Dam on Strong Creek, Rockwell Pond, Sugar Creek, Blakeslee Pond, Beaver Meadow Pond, Cooks Pond, Muddy Pond, Stowell Pond, Sunfish Pond.

Bucks—pike perch, Delaware River, Neshaminy Creek; yellow perch, Brock Creek, Delaware River, Queen Anns Creek, Tinicum Creek, East Swamp, Tohickon Creek, Three Mile Run, Maple Beech Pond, Silver Lake.

Butler—trout, Hogues or West Liberty Run; pike perch, Wolf Creek; yellow perch, Breakneck Creek, Bulls Channel, Harmony Junction Reservoir, Yellow Creek, Thorn Creek, Wolf Creek.

Cambria—yellow perch, Shaft or Pennsylvania Coal and Coke Company Dam, North Branch Little Conemaugh River, Little Conemaugh River, Clearfield Creek, St. Francis Lake, Newborough Dam, Davis Run or Dishart Run, Chest Creek, Walters Dam on Beaverdam Run, Slatelick Creek, Dooman Dam, Beaverdam Run.

Cameron—yellow perch, Bowers Pond, Devling Pond.

Carbon—trout, Buckwa Creek, Stoney Creek, Wild Creek, Mauch Chunk Creek, Fawn Run, Lesley Run, Hunter Creek or Yeagers Creek, Drake Creek, Pohopoco Creek; pike perch, Lizard Creek; yellow perch, Mahoning Creek, Kittatiny Pond, Lizard Creek, Little Gap Ice Dam on Aquashicola Creek, Perryville Dam on Pohopoco Creek, Harrity Dam on Pohopoco Creek, Tippet Swamp on Nesquehoning Creek, Lake Harmony.

Centre—trout, Spring Creek, Pleasant Gap Stream, Logan Branch, Little or Black Moshannon Creek; pike perch, Bald Eagle Creek; yellow perch, Bald Eagle Creek, Kepharts Dam, Sinking Creek, Rotes Mill Dam.

Chester—trout, Valley Creek; yellow perch, Blue Quarry Hole, Bradford Hills Pond, Buck Run, East Branch Brandywine Creek, Brandywine Creek.

Clarion—trout, Coleman Run, Reyner Run, Little Toby Creek, Piney Creek; pike perch, Red Bank Creek, Allegheny River; yellow perch, Red Bank Creek, Allegheny River, Clarion River, Paint Creek, Licking Creek.

Clearfield—trout, Gifford Run, Curry Run; pike perch, Sandy Lick Creek, Little Clearfield Creek; yellow perch, Little Clearfield Creek, Chest Creek, Berwindsdale Lake, Kneedlers Dam, Sandy Lick Creek, Beaver Run, Tannery Dam, Helveta Dam; pike perch, Chest Creek.

Clinton—trout, Swamp Branch Big Run, Middle Branch Big Run, Long Run, Backer Run; pike perch, Bald Eagle Creek, Pine Creek; yellow perch, Pine Creek, Bald Eagle Creek, Bald Eagle Canal.

Columbia—pike perch, North Branch Susquehanna River; yellow perch, North Branch Susquehanna River, Huntingdon Creek, Green Creek, Roaring Creek.

Crawford—trout, Stewart Run; pike perch, French Creek, Oil Creek, Lake Canadahta, Conneaut Lake, Crooked Creek; yellow perch, Oil Creek, Sugar Lake, Cussewago Creek, Clear Lake, Lake Canadahta, French Creek, Conneaut Creek, Conneaut Lake, Conneaut Creek, Crooked Creek.

Cumberland—trout, Letort Springs Run,

Yellow Breeches Creek, Mountain Creek; pike perch, Susquehanna River; yellow perch, Fuller Lake, Susquehanna River, Carlisle Water House Dam on Conodoguinet Creek, Mountain Creek, Hairy Spring Hollow Run, Yellow Breeches Creek.

Dauphin—pike perch, Susquehanna River; yellow perch, Susquehanna River, Wildwood Lake, Swatara Creek.

Delaware—yellow perch, Darby Creek, Ridley Creek, Chester Creek, Kaolin Quarry Hole; trout, Ridley Creek.

Elk—trout, Big Mill Creek, West Clarion Creek; yellow perch, Game Refuge Pond, Ridgway Water Works Reservoir, Straight Creek Pond, Indian Run Pond, Black Swamp Pond.

Erie—pike perch, Conneaut Creek, French Creek, West Branch French Creek; yellow perch, South Branch French Creek, West Branch French Creek, French Creek, Conneaut Creek, Lake LeBoeuf, Edinboro Lake, Lake Pleasant, Reunion Creek, Elk Creek.

Fayette—trout, Laurel Run or Morgan Run, Mountain Creek, Feiks Run; yellow perch, Upper Star Junction Dam, Lower Star Junction Dam, Smock or Pittsburgh Dam or Franklin Reservoir, Crabapple Dam, Layton Reservoir, Cool Springs Dam or Lemont Dam on Red Stone Creek, Brownfield Dam or Redstone Dam on Redstone Creek, Dunbar Corporation Dam No. 1.

Forest—trout, West Hickory Creek; pike perch, Allegheny River; yellow perch, Allegheny River.

Franklin—trout, Carbaugh Run; yellow perch, Back Creek, Conococheague Creek, Conodoguinet Creek, Muddy Run, Indian Lake, East Branch Little Antietam Creek, Goods Dam on East Branch Little Antietam Creek, West Branch Conococheague Creek.

Fulton—yellow perch, Cove Creek, Licking Creek.

Greene—pike perch, Enslow Fork, South Fork of Dunkard Fork of Wheeling Creek, Dunkard Fork, North Fork of Dunkard Fork of Wheeling Creek, Wheeling Creek, Pennsylvania Fork of Fish Creek, South Fork of Ten Mile Creek; yellow perch, Dunkard Creek, Muddy Creek, Wheeling Creek, North Fork Dunkard Fork Wheeling Creek, South Fork Wheeling Fork, Enslow Fork Dunkard Fork Creek, Brown Fork Creek, Pennsylvania Fork of Fish Creek, Whitley Creek, South Fork of Ten Mile Creek.

Huntingdon—pike perch, Juniata Valley Country Club Dam on Juniata River, Juniata River, Penn Central Dam on Raystown Branch Juniata River, Raystown Branch Juniata River, Aughwick Creek, Sideling Hill Creek, Frankstown Branch of Juniata River, Penn Central Dam on Frankstown Branch Juniata River; yellow perch, Juniata River, Penn Central Dam on Raystown Branch Juniata River, Standing Stone Creek, Whipple Dam on Laurel Run, Aughwick Creek, Sideling Hill Creek, Frankstown Branch Juniata River, Shaver Creek, Penn Central Dam on Frankstown Branch Juniata River.

Indiana—yellow perch, Cush Cushion Creek, Little Mahoning Creek, Muddy Creek, Yellow Creek.

Jefferson—brown trout, Manner Run; pike perch, Red Bank Creek; yellow perch, Strouse Dam, Elnora Dam, Reeds Dam, Little Sandy Creek, Sandy Lick Creek, Brookville Water Supply Dam, Red Bank Creek, Falls Creek Borough Storage Dam, North Fork Creek.

Juniata—trout, Horse Valley Creek; pike perch, Tuscarora Creek. Juniata River, Pomeroy's Dam on Tuscarora Creek, Lost Creek; yellow perch, Cocolamus Creek. Pomeroy's Dam on Tuscarora Creek, Juniata River, Tuscarora Creek, Lost Creek, Licking Creek and East Licking Creek.

Lackawanna—trout, Pond Creek, West Branch Wallenpaupack, Lehigh River, Roaring Brook, Crystal Lake; yellow perch, Handsome Lake, Windfall Pond, Mud Pond, Lake Sheridan, Baylor or Finn Pond, Crystal Lake, Newton Lake, Heart Lake, Chapman Lake, Moosic Lake, Mountain Lake, Ford Pond, Deer Lake, Sickler Pond, Johnson Lake, Lower Klondyke Lake, West End Lake.

Lancaster—pike perch, Holtwood Dam on Susquehanna River, Safe Harbor Dam, Conowingo Dam, Octoraro Creek, Muddy Creek; yellow perch, Hammer Creek, Little Conestoga Creek, West Branch Octoraro Creek, Stovers Dam, Octoraro Creek, Conestoga Creek.

Lawrence—trout, Hottenbaugh Creek; yellow perch, North Fork Little Beaver Creek, Neshannock Creek, Carbon Quarry Pool, Cement Dam on Big Run, Clarks Pond, Hottenbaugh Creek, Shenango River.

Lebanon—pike perch, Little Swatara; yellow perch, Little Swatara, Conewago Creek, Swatara Creek.

Lehigh—trout, Little Lehigh River.

Luzerne—trout, Philips Creek. Arnold Creek, Maple Creek, Meadow Run, Lehigh River, Harveys Lake; pike perch, North Branch Susquehanna River, Harveys Lake; yellow perch, North Branch Susquehanna River, Harveys Lake, Mud Pond, Nuangola Lake, Sugar Notch Dam, Cummings Pond, Browns Pond, Ice Lake on Wrights Creek, White Haven Dam on Lehigh River, Penn Lake on Wrights Creek, Ider Pond, Mountain Springs Ice Company Dam No. 1 on Bowmans Creek, Three-Cornered Lake, North Pond, Harveyville Dam on Huntingdon Creek, Paper Mill Dam on Huntingdon Creek, Cranberry Pond.

Lycoming—trout, Lick Run; pike perch, Lycoming Creek, Loyalsock Creek, Pine Creek, Muncy Creek; yellow perch, Pine Creek, Muncy Creek, Loyalsock Creek, Lycoming Creek, Mill Creek, Little Muncy Creek, Highland Lake.

McKean—trout, South Fork Kinzua or Watermill Creek, Willow Creek, Seven Mile Creek, Marvin Creek, Kinzua Creek, East Branch Tionesta Creek; yellow perch, Kushequa Pond, Gifford Pond, Allegheny River.

Mercer—pike perch, Neshannock Creek; yellow perch, Neshannock Creek, Pymatuning Creek, Little Shenango River, Shenango River, Cool Spring Creek, Otter Creek, Sandy Creek, Sandy Lake, Furnace Pond, Findley Pond, Wolf Creek.

Mifflin—trout, Penns Creek, Kishacoquillas Creek; pike perch, Juniata River, Jacks Creek; yellow perch, Juniata River, Jacks Creek, Juniata Country Club Dam on Juniata River.

Monroe—trout, Leavitts Branch, Forest Hill Creek; pike perch, Delaware River; yellow perch, Mountain Ice Co. Dam No. 1 on Tobyhanna Creek, Hawkeye Pond, Long Pond, Pocono Summit Lake, Echo Lake, Weir Lake, Little Saylor Lake, Lake Mineola, Half Moon Pond, A. L. Rake's Dam on Pond Creek, Delaware River.

Montgomery—yellow perch, Quarry Hole No. 1, Quarry Hole No. 2, Quarry Hole No.

3. Skippack Creek, Northeast Branch Perkiomen or Branch Creek, Towanencin Creek, Macoby Creek, Manatawney Creek, Gulf Mill Creek, Pennypack Creek.

Montour—pike perch, North Branch Susquehanna River, Chillisquaque Creek; yellow perch, North Branch Susquehanna River, Mahoning Creek, Chillisquaque Creek.

Northampton—trout, Saucon Creek; pike perch, Delaware River; yellow perch, Jacobus Creek, Hokendauqua Creek, Delaware River.

Northumberland—pike perch, Chillisquaque Creek, Warrior Run; yellow perch, Warrior Run, Chillisquaque Creek, Mahantango Creek.

Perry—pike perch, Susquehanna River, Cocolamus Creek, Juniata River, Buffalo Creek; yellow perch, Shermans Creek, Susquehanna River, Cocolamus Creek, Buffalo Creek, Little Buffalo Creek, Pennsylvania Power and Light Company Dam on Shermans Creek, Juniata River.

Philadelphia—yellow perch, League Island Lake, Chamoniux Lake.

Pike—trout, Sanvantine Creek, Middle Bushkill Creek, Little Bushkill Creek, Raymondskill Creek; pike perch, Lake Wallenpaupack, Delaware River; yellow perch, Minisink Lake, White Deer Lake, Little Mud Pond, Bruce Lake or Roots Pond, Fairview Lake or Big Pond, Lake Wallenpaupack, Big Walker Lake, Greeley Lake, Shohola Falls Dam, Twin Lakes, Westcolang Lake, Big Tink Lake, View Lake, Panther Lake, Welcome Lake, Sawkill Pond, Mud Pond, Delaware River, Lake Taminent, Forest Lake, Pecks Pond, Promise Land Pond.

Potter—trout, Kettle Creek, Pine Creek; yellow perch, Rose Lake.

Schuylkill—trout, Kombs Creek, Beaver Creek; pike perch, Lizard Creek; yellow perch, Suckers Pond, Lizard Creek, New Philadelphia Dam, Kauffman Dam on Stony Creek, Deep Creek, Manatango Creek, Old Union Canal, Old Union Canal Basin, Sweet Arrow Lake.

Snyder—pike perch, Middle Creek, North Branch Middle Creek, Penns Creek, North Branch Mahantango Creek; yellow perch, North Branch Mahantango Creek, Penns Creek, Ritchfield Dam on West Branch Mahantango Creek, North Branch Middle Creek, Pennsylvania Power and Light Company Dam on Middle Creek, Middle Creek.

Somerset—trout, Laurel Hill Creek, Whites Creek; pike perch, Youghiogheny River; yellow perch, West Branch Coxes Creek, Kimberly Run, Middle Creek, McDonaldsons Dam or Brothers Valley Coal Company Dam, Pigby Creek, Rowena Lake, Youghiogheny River.

Sullivan—trout, Kettle Creek, Elk Creek; yellow perch, Hunters Lake, Eagles Mere Lake, Elk Lake, Grant Lake, Rouch Lake, Williams Lake near Lincoln Falls, Splash Dam on Mehoopany Creek, Mud Lake (Fox Twp.).

Susquehanna—trout, Mitchell Creek, Starrucca Creek; pike perch, North Branch Susquehanna River; yellow perch, Wrighter Lake, North Branch Susquehanna River; yellow perch, Wrighter Lake, North Branch Susquehanna River, Hell's Half Acre Lake, Forest Lake, Jones Lake, Heart Lake, Page Pond, Idlewild Lake or Long Pond, Cottrell Lake, Lewis Lake, Lowe Lake, Comfort Pond, Lower Lake, Tingley Lake, Tyler Lake, Upper Lake, Middle Lake on Martins Creek, Schoolys Pond, Lords Pond, Lakeside

Pond, Carr Lake, Tuscarora Lake, East Lake, Beaver Pond, Alford Pond on Martin Creek, Round Pond, Stearns Lake, Fox Pond, Bigsby Pond, Arrowhead Lake, Big Elk Lake, Ely Lake, Laurel Lake, Quaker Lake, Butler Lake.

Tioga—trout, Pine Creek.

Union—trout, Sand Spring Run; pike perch, Penns Creek, Buffalo Creek, Turtle Creek, White Deer Hole Creek, Little Buffalo Creek; yellow perch, Buffalo Creek, Little Buffalo Creek, Turtle Creek, White Deer Hole Creek, Penns Creek, Millmont Dam on Penns Creek, Laurel Park Dam on Penns Creek, Pennsylvania Power and Light Company Dam on Penns Creek.

Venango—trout, Panther or Prather Creek, Hemlock Creek, Little or North Sandy Creek, Middle Branch Sugar Creek, Horse Creek, Little Scrubgrass Creek, Pithole Creek; pike perch, Allegheny River, French Creek; yellow perch, Polk State Sanatorium Dam, Lake Creek, Allegheny River, French Creek.

Warren—trout, Caldwell Creek; pike perch, Conewango Creek, Brokenstraw Creek, Allegheny River; yellow perch, Columbus Pond, Allegheny River, Conewango Creek, Brokenstraw Creek, Penn Avenue Dam on Conewango Creek, North Warren Dam on Conewango Creek, Bear Lake.

Washington—pike perch, Buffalo Creek, Ten Mile Creek; yellow perch, Ten Mile Creek, Buffalo Creek, Willow Beach Lake, Cross Fork Creek, Laughlot Mill Dam, Aunt St. Clara Fork of Middle King Creek, Kings Creek.

Wayne—trout, Shad Pond Creek, Crooked Creek, East Branch Starrucca Creek, South Branch Equinunk Creek, South Branch Calkins Creek, West Branch Lackawaxen River, Lackawaxen River, Butternut Creek, West Branch Wallenpaupack Creek, Wallenpaupack Creek; pike perch, Lake Wallenpaupack, Delaware River; yellow perch, Starlight Lake, Coxtan Lake, High Lake, Lake Como, Hiawatha Lake, Long Pond (Preston Twp.), Island Lake, Lake Henry, Lake Ladore, Keens Pond, Elk Lake, Bigelow Lake, White Oak Pond, Long Pond or Chestnut Lake, Long Pond, Gouldsboro Ice Pond, Bone Pond or Summit Lake, Big Hickory Lake, Spruce Lake, Independent Lake, Beach Lake, Lake Wallenpaupack, Delaware River, Shehawken Lake, Sly Lake, Clines Pond, Adams Lake, Duck Harbor Pond, Kizer Dam on Middle Creek, Cadjaw Pond, Bunnells Pond on Carley Branch, Seeleyville Pond, Goose Pond, Huffs Pond, Crackenburg Pond, Freethy Pond on Carley Branch, Rose Lake, Justins Pond, Lower Woods Pond, North Jersey Lake, Snag Pond, Long Pond (Lake and Paupack Twps.), Perch Pond, Lake Wallenpaupack.

Westmoreland—yellow perch, Four Mile Run, Greenwalt Dam, Beatty Reservoir, Bagley Reservoir, St. Vincent Lake, Mammoth Dam, Margarete Dam, Carpentertown Dam No. 1, Carpentertown Dam No. 2.

Wyoming—trout, Leonards Creek; pike perch, North Branch Susquehanna River; yellow perch, North Branch Susquehanna River, Chamberlin Pond on Little Mehoopany Creek, Nigger Pond, Edingers Pond, Mud Pond, Lake Carey, Lake Winola.

York—pike perch, Conewago Creek; yellow perch, Bermudian Creek, Little Conewago Creek, Conewago Creek, South Branch Codorus Creek, Krentz Creek, Kohlers Mill Dam, Broad Water Lake.



HERE ^A_ND THERE IN ANGLERDOM



SHOWING YOU A 33-POUND
MUSKIE FROM LAKE LEBOEUF,
ERIE COUNTY

Big brown trout held the limelight in Pennsylvania fishing during the month of June. Willow Creek, in Berks County, yielded a 24-inch brownie to Corporal David Daniels of the Highway Patrol. Warden Bill Wounderly, of Reading, also reported the taking of a 19-inch brown trout by Dr. Houck from Willow Creek. J. E. Compton and Alderman Bricker, of Reading, each landed a 16-inch brownie. Bricker won a bet with Compton when his trout turned out to be a trifle heavier.

The famous Little Lehigh River, near Allentown, furnished exceptional trout fishing for Lehigh County fishermen this year as usual. Following are a few of the catches reported by Warden Joel Young, of Fullerton: Isaae Lutz, Hellertown, a 13-inch brown trout; Bill Miller, Allentown, a 17-inch rainbow and three 12-inch brownies; Ray Winkle, Allentown, an 18-inch brownie; Warren Yeakel, Allentown, a 19-inch rainbow. A 22-inch brown trout was caught in Spring Creek by Louis Albright, of Allentown. It weighed three pounds. Jordan Creek yielded a 19½-inch brownie to Harry Moyer, of Allentown, while Allen Bear, of Bethlehem, landed a brown and a rainbow that had a total weight of 5½ pounds. The brownie measured 15½ inches and the rainbow, 19½ inches.

Lester Reitz, Dean Shankle and Clair Jones, of New Bethlehem brought home evi-

dence of real fishing skill when they returned from a week-end fishing trip to Pine Creek in Potter County. The evidence consisted of two giant brown trout, one 23½ inches long, weighing 5½ pounds and the other 22½ inches in length with a weight of 4½ pounds. A brownie weighing 4½ pounds and measuring 23½ inches was caught at Mud Lick by Irvin Probst of North Bend. A Jersey Shore angler, Carl Vanemon landed a brown trout measuring 21½ inches in length.

Special Warden Floyd C. Baker, of Scranton, heads this report "A Little Fishing News from Lackawanna County." He writes: "Angling at a favorite spot near Starrucca, Roy March and Dr. Spencer caught 20 trout apiece. Marty Wintermantle has taken one brook trout and six browns out of Middle Creek, Wayne County. Fishing at Leigh, Leo Huber caught eight browns, while Bill Strausser landed 14 of the brown species. Mike Thiede returned from Rattlesnake Creek with seven brown beauties, and Dr. Gelbert's catch numbered 10. Eight brownies liked the bait used by Dan Dutter on the Lehigh River, while Otto LaBahn returned from Rattlesnake with 12 big brownies."

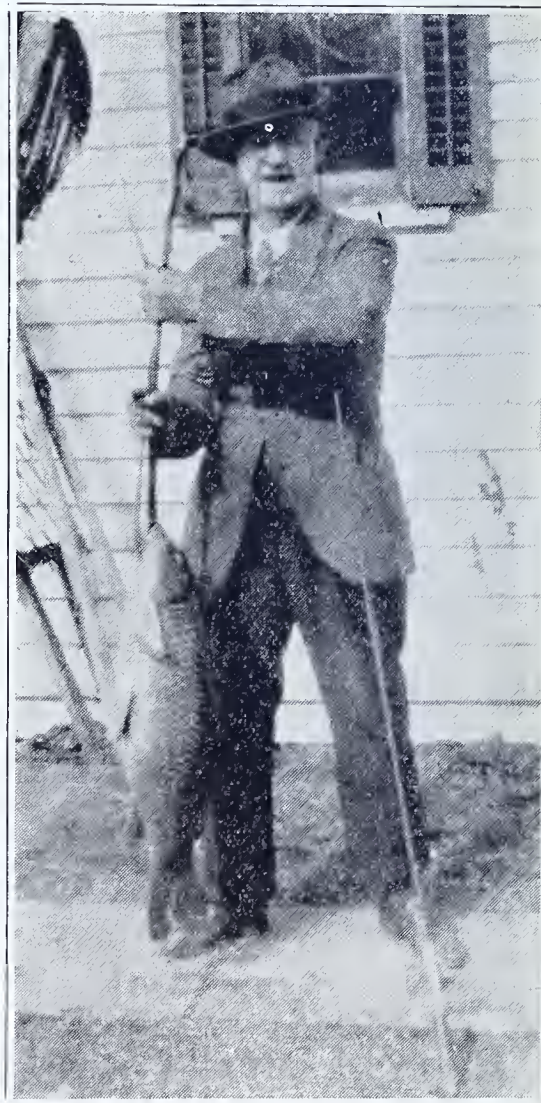
Another giant brown trout, the largest reported from Columbia County this year, was taken from a dam on Fishing Creek, near Benton, early in the season, according to Warden Charles Litwhiler. The trout, measuring 26¼ inches, was caught by Earl McHenry, of Lime Ridge. The weight of the fish was not given, however.

Sucker fishing on the Frankstown Branch of the Juniata River was good this spring, according to Warden Lincoln Lender of Bellwood. On two different days, while fishing at the juncture of Canoe Creek and the Branch, Tom Butterbaugh, of Altoona, caught 16 and 17 suckers by noon of each day. Banning of the net and spear in taking suckers is credited with being a favorable factor in the improvement of still fishing by anglers in that section of the state. Lender writes.

Definite improvement in fly-fishing for trout on Potter and Tioga County streams came early in June, according to Horace Boyden, warden at Wellsboro. Prior to that time, trout were gorged on "stickworms," larvae of the caddis fly. Writing on May 20th, Boyden said: "The large trout are feeding on stickworms that are now fully grown and show their heads outside the sticks. The trout eat them stick and all, and during that time fly fishing is generally poor." With the hatching of the caddis flies early in June, artificials of this pattern were highly effective for about a week, and then other patterns of flies came into their own."

When it comes to fishing East Licking Creek, one of the outstanding trout streams in Juniata and Mifflin Counties, Chris Bosingher who lives in the valley of Licking Creek ranks in a class by himself, according to Warden Charles Long. That knowing the stream is a big factor in taking trout was demonstrated recently when Chris landed 20 brook trout one evening and the next morning caught 18. All of the fish were over seven inches in length.

Wayne County's Lackawaxen Creek provided great trout fishing for the Bowden brothers, of Olyphant, on opening day, writes Warden LeRoy Noll. John Bowden caught eight brookies, Henry nine, Jim 14, and Sam, 10. All of the trout were from nine to 10 inches in length. J. H. Clemmer, of Spring Mount, caught a brownie measuring 17 inches and weighing 1¾ pounds.



TOM GRIFFITH, DAMASCUS, WITH
14-POUND CARP CAUGHT THIS
YEAR

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NOTE

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PENNSYLVANIA ANGLER

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EDITORIAL

KILL THE WATERSNAKE

WITH low water general in many of our trout and bass streams, the menace of natural destroyers of fish life becomes increasingly serious. When water levels are high, or even at normal stages, trout, bass and other fish have a fairly good chance of eluding natural enemies. The reverse applies under low water conditions. Concentrated in shallow pools and riffles, fish afford an easy prey, and the toll taken on them is extremely heavy. This month, thousands of female watersnakes will bring forth their young, and if only a small proportion of the season's brood survive they will represent just that much additional drain on the fish supply.

One of the most commendable features in the drive for better fishing here in Pennsylvania has been the wholehearted cooperation of our sportsmen, Boy Scouts and others in thinning down the number of watersnakes. Real progress has been made on some of our outstanding bass and trout waters. But the snake-killing campaign is now only well under way. This month and September should mark extensive destruction of these reptiles on our fishing waters. Under present conditions it will mean the saving of thousands of fish for the fishermen.

Increased fishing on practically all of our waters in recent years has served to stress the need of predator control. The inland waters, as the red man knew them, teemed with fish. The presence of thousands of fish destroying reptiles, birds, and animals was an essential feature in the scheme of things. Uncontrolled by natural predators, the vast supply of fish in the streams would eventually have brought about a state of over-population of the waters. In primitive Pennsylvania, the balance of

nature was a vital factor in all of our streams. It is just as important today insofar as retaining the proper balance between species of fishes is concerned.

However, modern conditions in our fishing waters are almost in direct contrast to those prevailing when William Penn founded his colony. Today, thousands of fishermen invade the streams for sport. Pollution has drastically curtailed waters capable of sustaining fish life. Natural reproduction of fish is augmented by the stocking of suitable waters with millions of fish from hatcheries maintained by the licensed fishermen. Obviously, the present day fishing problem is one demanding a maximum number of fish in every stream being fished. It is at this point that the watersnake enters the picture. Not only is it destructive to forage fishes such as the minnow, but its toll on bass spawn, young bass, and other game fish as well as food fish represents a direct loss to the anglers of the Commonwealth.

Watersnake control, if drives are organized, is not difficult. Covering a snake-infested trout stream or bass fishing area in a single day, five sportsmen armed with small calibre rifles may destroy dozens, and possibly one hundred of the reptiles. Shooting watersnakes is ideal practice with small arms and perhaps the most effective method by which they may be thinned down.

Pennsylvania fishermen during the past few years have demonstrated one fact with emphasis—they are conservation-minded. The sportsman's code is a by-word with the majority of our anglers and their efforts to improve fishing conditions are worthy of highest praise. Through stream improve-

ment they have bettered natural conditions under which trout may live on a number of our trout waters. To make stream improvement even more effective, it is necessary that watersnake control be rigorously carried out.

Just how many fish a watersnake of medium size may destroy from the time it leaves hibernation in the spring until it again enters a dormant state in the autumn is not definitely known. It is adept at catching fish and frogs and voracious in appetite. Assuming that it will capture and consume on an average one fish of medium size a day—and this is an extremely low figure when its habits are taken into consideration—a watersnake during its season of activity would destroy 200 fish. Probably a more accurate figure would place the number of fish consumed at 500 or more. Multiply this seasonal prey of an individual snake by the thousands of watersnakes on our fishing streams and the annual toll taken from the inland waters is staggering.

Should low water, prevalent in virtually all sections of the state, continue through September, the cooperation of sportsmen in saving fish of all species in the fresh water will be highly essential. If we are to have the kind of fishing that is the desire of every angler, our army of fishermen will be an outstanding factor in deciding the issue. Destruction of watersnakes on a statewide scale is a major step in the campaign for better fishing.



Commissioner of Fisheries.



THE CARP PROBLEM IN PENNSYLVANIA

IT is significant that two species of fish introduced from Germany to Pennsylvania waters have become abundant. One, the German brown trout, today is a favorite game fish and in many of the major trout streams outnumbers our native species, the brook trout. The popularity of the brown trout, however, is not shared to any great extent by the other introduced species, the German carp. Many Pennsylvania fishermen regard this fish as a menace to native species in areas it inhabits, although an increasing number of anglers are deriving some sport in fishing for it. Facing the facts in the carp situation, however, it is here to stay, and perhaps the most effective way by which its numbers may be controlled is an increase in carp fishing with hook and line.

Just how difficult carp control by netting may be was illustrated last year in Conneaut Lake in western Pennsylvania. So abundant were carp reported to be in this lake, that the Fish Commission arranged with a commercial fisherman on Lake Erie to bring his nets and equipment to Conneaut to reduce the number of carp. Skilled net fishermen operated the great seines, many game fish and other popular species of fish were captured and released, but comparatively few carp were taken. Whether they escaped the meshes of the nets by burrowing into the mud of the bottom is a matter of conjecture, but certainly the attempted netting resulted in failure.

The carp is by nature a vegetarian, that is, it secures a large portion of its food supply from aquatic plant life and vegetable matter of the fresh water. In this respect it is perhaps most harmful, rooting up many forms of aquatic plants that aid in the production of tiny aquatic organisms and help

in preserving a proper ratio of nitrogen and oxygen in the streams. A school of large carp feeding among the weeds is usually not difficult to locate, for in their wake silt and mud stirred by their activity is much in evidence. Naturally, in feeding on vegetable matter, they also secure some of the tiny organisms known as plankton. Occasionally carp may be seen, their dorsal fins and the upper portions of their backs protruding above the water, as they forage or bask in the sun near the shoreline. They somehow give the impression of a group of fat hogs wallowing in the mud, for laziness is an attribute of the carp as well as of the hog.

Having available an abundance of natural food, these introduced fish will attain great weight. The largest caught on hook and line in Pennsylvania waters last year, and now on record at the Fish Commission, was taken from the Susquehanna River near Harrisburg. This carp measured over 40 inches in length and weighed more than 40 pounds. While carp of this size are not taken on hook and line very often, many weighing from eight to 15 pounds have been reported. One trapped by receding water in an eddy at the Safe Harbor dam last year weighed 56 pounds.

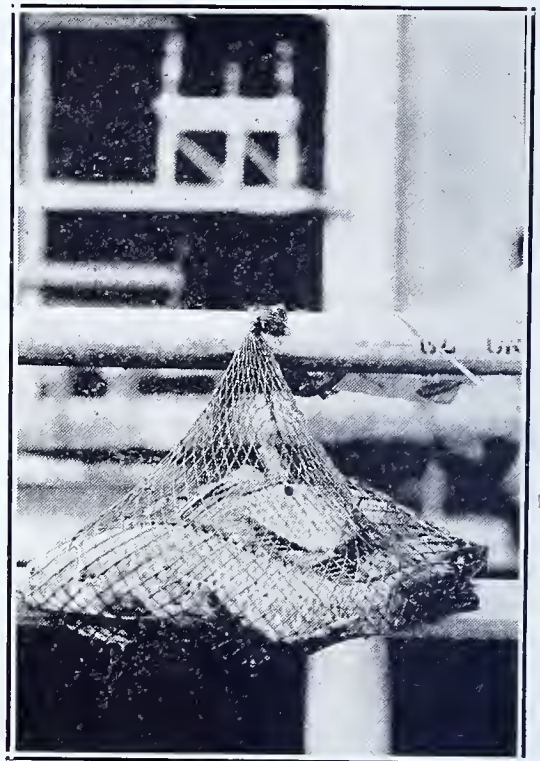
"Domesticated" Carp

An early report of the Board calls attention to the fact that German carp have for centuries been domesticated in Europe. So long has it been known to European waters that its origin is somewhat obscured. Its original habitat is believed however to have been central Asia. Even in the thirteenth century it was regarded as an important food fish in Austria and was extensively cultivated.

It is believed that carp were originally introduced into Upper Lusatia, Saxony, Silesia, Bavaria, and Poland at the beginning of the fourteenth century and to English waters in 1504. By 1900, nearly every lake and river in Europe swarmed with them and they were even said to be numerous in the Black Sea and Caspian Sea. As much care was given to the cultivation of carp in Germany as was given to raising domestic fowls and animals as food. Hundreds of acres were devoted to carp raising by private individuals, and carp were said to be looked upon by Central Europeans in much the same light as cows, sheep or fowls. The leather carp was and is considered a fine table fish, ranking with the best, while the mirror carp also has many admirers.

Destructive to Fish?

Perhaps the most effective way to determine just how destructive the carp may be to other species of fish in its environment is to consider Pennsylvania bass waters in which it is abundant. As a first considera-



A CATCH OF CARP

tion, let us turn to the famous North Branch of the Susquehanna River. Generally recognized as an outstanding producer of small-mouth bass and walleyed pike in the East, this stream harbors thousands of carp. It is subjected to probably the most intensive fishing of any Pennsylvania stream, not only by residents of this state but by non-resident anglers, and annually, the catch of bass measures up to or even surpasses that of the year before. To a lesser degree, the lower Susquehanna, particularly in the great dams, Conowingo, Safe Harbor, and Holtwood, all carp-infested areas, provides excellent fishing for game and other food species. The Allegheny River in northwestern Pennsylvania, the Conodoguinet Creek in Cumberland county, the Juniata River and the Rays-town Branch of the Juniata in the central counties, and the upper Delaware in northeastern Pennsylvania are streams frequented by carp in large numbers yet good producers of game fish, panfish, and food fish.

Two notable exceptions to waters in which both carp and other species of fish mingle are Lake Wallenpaupack in Pike and Wayne counties, and Lake Gordon in Bedford county. These fishing areas have been created in recent years, and every effort has been made to prevent introduction of foreign species of fish not believed desirable. Newly created bodies of water of this type may be stocked on a scientific basis only if no undesirable species of fish were present prior to flooding. Obviously, this plan is feasible in comparatively few instances. Lake Koon, in Bedford county, a sister lake to Gordon, is the latest example. It is extremely diffi-



TYPICAL SPECIMEN OF THE GERMAN CARP



CARP ARE ABUNDANT IN SAFE HARBOR DAM ON THE LOWER SUSQUEHANNA

cult to draw a comparison between the bass fishing in Lake Wallenpaupack, for instance, or that in the North Branch of the Susquehanna. Certainly, the smallmouth bass yield of the famous Branch, in spite of the carp, is second to that of no other inland water area of Pennsylvania.

What Happens to Young Carp?

Female adult carp are very fecund, that is, they spawn, individually, many thousands of eggs a year. There is little doubt that, under average conditions in most of our fishing waters, thousands of young carp are hatched. Yet, while perhaps in one great pool a school of possibly thirty or forty adult carp may be frequently observed, the proportion of adult fish in comparison to the thousands of young reproduced annually is extremely light. What happens to the young carp? It is improbable that the death rate of carp fry, members of one of the most hardy species of the inland waters, can be so abnormally high as to explain the comparatively few fish that develop to maturity.

The manner in which nature controls the numbers of any species of fish is vividly illustrated in this instance. Young carp, it is believed, form a considerable portion of the food of game fish, that is, pickerel, bass, and wall-eyed pike. A voracious bass, happening upon a school of the young will slaughter many of them. Similarly, a wall-eyed pike or pickerel, equally active and voracious, may destroy many of the young. And since game fish forage, that is, an abundance of live food in game fish waters, is a first requisite to good fishing for the popular game species, the carp is, at worst, a mixed evil. Balancing any good qualities with bad, this comparative newcomer to our waters assumes a somewhat neutral position.

Carp Fishing

One fact has stood out during the past ten years in dealing with the carp in Pennsylvania. The most effective system of carp control is by hook and line fishing. This type of fishing has become increasingly popular in recent years, and hundreds of fishermen are skilful at it. Obviously, even intensive still-fishing cannot exterminate the carp, but it does serve in reducing greatly the number of these fish. The year round, Sundays excepted, carp may be legally taken, and there is no size limit. To remove any doubt concerning the dogged resistance of which a 10-pound carp is capable, it is only necessary to talk to a veteran carp fisherman. He will probably tell you that to land a fish of this size, at least fifteen minutes of playing is necessary, and frequently half an hour. The small hook used in carp fishing permits little forcing of the fish, as it is easily torn from the carp's tender mouth.

Carp fishing, like fishing for suckers, requires patience. Often, after locating a school of the big fish, the fisherman decoys them to a certain location by scattering sweet corn or corn meal near the spot he intends to try. As carp do a great deal of their feeding during the night, this procedure may be followed covering a period of one week. Attractive carp bait includes doughballs, in which some fishermen use molasses, corn, and cornmeal. Occasionally after a carp has taken the bait, which it may toy with for possibly ten minutes, it starts moving away and the battle is on. Some anglers who fish for carp prefer a rod with plenty of backbone, yet limber enough to insure against tearing out the hook. From

the sport angle, this type of rod has the additional advantage of recording every movement of the fish in its struggle to break away. Sinkers heavy enough to hold the bait on the bottom of the stream are also used in carp fishing.

Another carp fishing method employed frequently, particularly by fishermen using canned sweet corn for bait, is to scatter some of the corn in the water a short time before casting the line. The hook baited with corn is then dropped to the bottom in the same location. Usually the largest corn obtainable is used, and very early morning or late evening fishing is preferred, although many carp fishermen try their luck after nightfall.

Preparing Carp for the Table

While exceptionally large carp are not attractive as food fish, carp weighing from four to 10 pounds are suitable for eating if prepared properly. Some fishermen take live carp and place them in pure spring water for a period of from one to two weeks. It is believed that the clear water serves to remove much of the objectionable muddy taste from the fish.

If it is not possible to follow this plan, carp may be prepared by scaling and then skinning. A veteran carp fisherman said recently that in cleaning one of the fish he cuts away the flank, or lower portion of the carp and discards it. The fish is first scaled, and then the skin is removed, starting at the base of the tail and pulling it forward. Frequently, a pair of pliers simplifies the skinning, and care should be used not to tear the skin while removing it.

With the increased interest in carp fishing in many sections of the state, it is prob-

able that during the next few years thousands of these fish will be taken from the inland waters. As a control measure, carp fishing ranks as an important feature in the better fishing program, for certainly a sharp reduction in the number of these fish in Pennsylvania waters is highly desirable.

ANOTHER REMEDY FOR IVY POISONING

C. R. Bersen, of Reading, a member of the State Board of Directors of the Izaak Walton League, offers the following formula for relieving ivy poisoning.

One ounce of liquid blood root mixed in one point of good cider vinegar. Mix well and apply it to the afflicted parts daily. This should reduce the swelling in a short time, and has worked well in a number of severe cases of ivy poisoning, according to Mr. Bersen.

BROKENSTRAW TROUT

Speaking of big trout in Warren County is synonymous with mentioning the beautiful Brokenstraw Creek. Word comes from R. C. Bailey, warden at Youngsville, that this stream, equally famous for its superb bass fishing, has yielded some unusually fine brown and rainbow trout this season.

Three big brownies were taken during the week of May 27 by F. M. Geer of North Warren. These trout were 22½, 22, and 18½ inches in length respectively. Romeo Ficcardi of Corry caught a brown trout 24 inches and a rainbow 19 inches in length.

Save your nerves, save the doctor bill—go fishing.

BIGGEST BROOKIE

Schrader Creek in Bradford County has yielded the largest brook trout reported to the Fish Commission this season. Warden Myron Shoemaker of Laceyville reports that Bert Haines of Powell made the catch, a brookie measuring 16½ inches in length.

Other good catches are also being reported from this stream. Morris Allen of Towanda recently caught 20 fine brookies in a day's fishing. Trying the Tioga River, Harvey Jenkins of Canton landed a mixed creel of 20 brook and brown trout.

TROUT FISHING IN PINE CREEK BEST IN YEARS

From Warden Horace P. Boyden of Wellsboro, Tioga County, comes word that big brown trout have been taken consistently on the fast waters of Pine Creek. Kettle Creek, Cedar Run and the headwaters of the Tioga River have also been fished heavily and yielded good creels. The smaller trout waters have been too low owing to dry weather.

An evening's checkup on Pine Creek recently, Boyden writes, revealed that 27 brownies, some 19 inches in length, had been taken by fly fishermen. B. J. Northrup of Asaph took 16 brownies from the stream, nearly all of them over 12 inches in length. Anglers not only from Pennsylvania but other states have been fishing Pine Creek's fast waters and pools this year.

An unusually large number of bass spawning beds are reported in lower Pine Creek and some fine bass have been taken by minnow fishermen as far upstream as Ansonia.

LACKAWAXEN BASS MAKE THINGS LIVELY

Bass are becoming plentiful in the Lackawaxen River, Wayne County, according to Special Warden A. M. McKinstry of Philadelphia. Fishing fly for trout in the Lackawaxen near Hawley, he caught seven small-mouth bass, the largest measuring 17 inches. As the bass season was not open, he quit fishing in that section of the stream, although the fighting bass certainly made things lively on his light fly rod, before subjecting themselves to careful release to the stream.

He then tried the Brodhead Creek at Canadensis and caught seven fine trout, the largest measuring 14½ inches. Fly used, Hare's Ear, tied on a No. 10 hook.

TEMPLETON SPORTSMEN RALLY

Well over a hundred enthusiastic sportsmen of Templeton met recently and organized under the name of the Templeton Rod and Gun Club, bringing three well known and very highly respected marksmen's clubs together.

Officers elected were as follows: Harry Hold, President; Wm. Sharrer, Vice-President; Frank Rebolt, Secretary; H. H. Yager, Treasurer.

Always be sure to soak a leader thoroughly before fishing. This applies not only to fishing for trout but in angling for any other fresh water species of fish.



YOUTH TAKES A LESSON IN TROUT FISHING. W. S. LAY OF LOCK HAVEN IS THE TEACHER AND THE SCENE IS FISHING CREEK

BLACK BASS ARE SELECTIVELY BRED

It is a recognized fact that the fish endowed with the most cannibalistic traits are our finest game fish. They are the finest game fish because only the most vigorous and the most alert are permitted to survive from a season's hatch. Science claims to have made great strides in the selective breeding of animal life, yet when compared to nature's method of selective breeding in fish life, scientific efforts are puny.



Take the black bass, for instance. Generation after generation, only the most rapid-growing individuals and those endowed with the keenest sense of self-preservation are permitted to live. When a baby bass slackens its alertness for an instant it is devoured by its fellows or other natural enemies. If it lacks vitality and energy through disease or a deformity it is likewise quickly destroyed. The slow growers or poor feeders are soon outstripped by their more vigorous brothers and sisters which in turn devour the runts as food. This same method of survival of the fittest is nature's ruthless method of perpetuating most strains of wild life.

The brook trout, for example, is not regarded as an extremely cannibalistic or voracious fish. It is not equipped with the fighting armor of the black bass and is given but little protection so far as scales and outside covering are concerned. Yet nature had to have some way of perpetuating the strain of these fish to make them what they are today—one of Pennsylvania's most favored fishes. The method of carrying on the strain of brook trout is not quite so ruthless as that of the bass because nature does not permit, under ideal conditions, any but the most vigorous to sire the next season's crop, thus thinning down the weaklings in number and developing individuals that nature must eliminate in its most ruthless way.

Many sportsmen who are not keen students of nature's beautiful set-up cannot understand why trout are endowed with the pugnacious instinct that they have at the spawning season, when it is not uncommon for a heavy mortality to result from their fighting during the mating season. This fighting instinct drives back or keeps the smaller or weaker male fish from impregnating the egg crop, giving the most vigorous and active males an opportunity to perpetuate the race.

Insofar as under-developed female trout seeding the water areas of small streams with fish, this also is wisely taken care of by nature to a great extent. The smaller the female the smaller the egg. Naturally, the smaller offspring stands less chance of survival than the offspring from a larger egg or, in other words, from a larger parent fish, and therefore, the weaker strain has little chance of being perpetuated.

FALL-FISH HITTING

Bald Eagle Creek in Centre County provides not only good trout and bass fishing but offers real sport for panfish as well. From up Bellefonte way comes word from Pete Hoffman that an unusually large catch of fall-fish was made recently on this stream by Chief of Police Harry Dukeman and M. T. McAlarney, Bellefonte.

McAlarney and Dukeman each caught 25 fall-fish while trying their luck on the Bald Eagle on May 19. The scrappy fall-fish, ranging in length from 12 to 16 inches, were taken on wood sawyers.

HOLD RALLY

A recent rally of the Pottstown Sportsmen's Club was a splendid success, according to a report of its Secretary, Edwin Ibach. Wilbur M. Cramer, Division Game Supervisor, and Norman M. Wood, of the Educational Department, were the principal speakers.

THE GOLDFISH AS LIVE BAIT

Because of the bright coloration of the goldfish and its tenacity of life, it has become more or less popular as a live bait for bass and pickerel. Our Board is very much opposed to the use of goldfish as live bait. The goldfish belongs to the carp family and when given free range grows to a length of from twelve inches to fifteen inches. It is very hard, when uncolored, to distinguish this fish from the true carp. High coloration in goldfish was brought about by selective breeding. Certain individuals, however, do not breed true to color and always retain the dark, dull, carp color. Goldfish that are released in open waters and are in competition for their existence with other species of fish, in a few generations almost entirely lose their brilliant coloration. This is owing to nature's method of selective breeding, as the more highly-colored portion of the season's crop readily fall prey to natural enemies and eventually a dull-colored strain will appear. This dull-colored strain is then assumed to be a carp and is certainly not a desirable fish for our inland waters.

Another reason why unthinking sportsmen try their luck with goldfish is because indiscriminate bait handlers may induce them to buy them. They, in turn, can buy these fish at a very nominal figure, and hold them in tanks for an indefinite period without a serious loss which makes a big turnover in investments. Our native species of bait fish are more difficult to retain in captivity. One reason that these goldfish are so readily secured is that they are the culls of the season's crop produced on the goldfish farms and have no commercial value other than for this purpose.

NOT COMPLAINING

Two anglers who are not complaining about trout fishing this year, writes Warden R. C. Bailey, are Mr. and Mrs. George Zobrest of East Warren. To the contrary, they are highly enthusiastic, for both have made splendid catches on Warren County streams. George, with 86 trout, is leading in number but Mrs. George, having caught 81, has the largest to her credit, a 13½ inch brownie.

ANNUAL OUTDOOR MEETING

The fourth annual outdoor meeting of the Pecks Lake Association was held on Smith's Landing at Pecks Lake, Pike county, July 4, at 10 A.M. This meeting is always well attended as the election of officers is held at this time. Harry Hiller of Allentown was selected as president, Joe Elsonburger of Stroudsburg, vice-president, O. Howard, Philadelphia, as chairman of the board of directors, and George W. Schantzenbach was again elected secretary-treasurer. The next outdoor event will be the annual clam bake sponsored by the association.

The yearly fishing contest opened July 2 with three fine prizes for the three longest pickerel taken out of Pecks Lake. The largest pickerel taken was 25 inches in length, and was caught by Charles George of Allentown. This was the only affidavit on record when the meeting was held. William Miller, a native of Pecks Lake, displayed two 23-inch pickerel at the meeting. Last year's contest was won by John W. Eckert of Wernersville with a 29-inch pickerel. The Pecks Lake Association offers a reward of fifteen dollars for information leading to the arrest and conviction of any person or persons catching undersize pickerel, and for taking frogs or food fish unlawfully.



Seth Says

Jest t'other day I went up along our trout run, an' I reckon I ain't ever seen it lower afore. An' right now, I'm sayin' thet them piles o' brush an' tree tops I throwed in a year back is a right good thing fer the trout. Us boys put in some dams an' rocks this summer an' thet helped considerable too. Ef it wasn't fer our helpin' out a little, trout'd stand mighty pore show this dry season.

I was a-walkin' along quiet like when I sees a right big watersnake slip inter a hole where I knowed some sizable trout to be. Well sir, them trout run every which way an' one of 'em, mebbe ten inches long, runs under a big rock slopin' ter the water edge. Thet snake didn't pay no heed ter enny trout but the one thet goes under the rock. Under he goes too, an' when he comes out he's hangin' on the trout fer dear life. I grabs a club handy an' when mr. snake pulls inter shaller water, I lambasted him an' broke his back. Thet's one snake less an' one trout more, I figger.

Watchin' them snakes ketch fish hes showed me one thing. Ef they kin corner a trout, they'll do it most every time, jest the same as they ketch catties in the big crick. An' thet's sure hard on trout, fer the first scare they gets, they heads right fer under the first rock or bank they kin find, and then the snake nabs 'em. Minks likewise ketches fish thet way right often.

I'm sayin' right now, the sooner we kill off some of these dirty sneakin' watersnakes, the sooner we're goin' ter have better fishin'.

Native Trout Flies

By Chas. M. Wetzel

MUCH has been set down in print concerning methods of fishing for trout, but comparatively little has hitherto been written for the practical fisherman, on that fascinating study of entomology, or the study of flies and insects,—those small winged creatures which in varying stages, comprise the trout's principal diet. It is a subject which should claim the attention of every fly fisherman and aside from the pleasure derived in its pursuit, every angler will be secretly pleased in the knowledge that another rung in the ladder of piscatorial achievement has been scaled.

I have endeavored in the following articles to present a brief description of our more common stream flies with the hope, that the advantages derived will enable the average angler to approximate the true insect more nearly with his artificials; and furthermore, that he will be able to distinguish and classify the more common flies and can then converse intelligently with those "High Brow" anglers,—who speak learnedly on flies, tie their own artificials and confound the novice with their superior wisdom.

In this issue we will first take the Drakes, as they are perhaps the favorites in the fisherman's lists. When a hatch first appears on the water—the trout, seemingly actuated by a common impulse, rise frenziedly and with reckless abandon to gorge themselves, while the opportunity is present,—as if knowing that the stay of this fly is very brief.

It is an occasion seldom witnessed on other hatches and fortunate indeed is the angler at such a time who is provided with artificials resembling the natural insect.

Belonging to the family of Ephemeridae, they are easily distinguished because of their peculiar reversed and elevated position of the tail or stylets. The body is very long and slender, consisting of joints tapering to the end and terminating in two or three long delicate stylets. The length averages around three-quarters of an inch, although I have seen larger specimens. It has a pair of transparent wings, oblong, net veined and slightly mottled. When it rests these wings stand upright like the wings on a butterfly. At the base of the large wings are two smaller wings. The bodies are soft, easily crushed in the fingers, and in the imago or perfect stage, it assumes the most delicate shapes and colors, in seemingly endless variety. They are eccentric in their choice of habitation as probably a hundred yards further upstream, from where the hatch is the thickest, not one will be visible.

In different localities they are known under various names, as, "May Flies," "Shad Flies," "Day Flies" and others. On Penn's Creek they are commonly known as the Shad Flies and rise to the surface around Memorial Day or slightly earlier, depending on the season. They seem to arrive on the long still water earliest, later on in the riffles. A few years ago on Penn's Creek, the hatch

was so plentiful that the protruding rocks and banks were literally plastered. Needless to say that plenty of brown trout met their "Waterloo," at that time. When fishing this stream around the latter part of May, one invariably inquires: "Have the Shad Flies been on the water already?" And receiving a negative reply, comforts himself with the thought that the hatch might materialize before nightfall and in the meantime, indulges in pleasant memories of the hatches of by-gone years.

The mature insect exists but a short time (probably a few days) and for the purpose of reproduction only. During this time it exists in two distinct stages, the sub-imago and the imago; in these forms they possess only the most rudimentary mouth parts and partake of no food. Their eggs are laid upon the water and from these eggs are hatched the larvae. This larvae changes to the pupa, progressing towards the perfect insect; but as larvae and pupa, they probably live for two or three years, burrowing in the mud, hiding under stones and among grass and weeds. It is strictly an aquatic animal and is being constantly preyed upon by trout seeking nymphs. As the larva and the pupa it is a voracious creature, constantly feeding on other insects.

Finally the pupa case or skin splits open and the fly emerges, with wings now fully



WHERE THE DRAKES SWARM. ONE OF THE POOLS IN PENNS CREEK

formed. One wonders on seeing these flies apparently springing from all parts of the water but in looking closely we may discover the cracked and empty pupa cases, floating away with the current. It is now in the sub-imago stage and at first flies slowly, pausing often to rest in the shady quiet of an overhanging branch, or to sleep half hidden among the blades of grass. It is at this stage—when, being weak and sluggish from their long captivity and having had no opportunity to exercise their wings, they are eagerly preyed upon by the trout.

Among the species best known are the Green Drake (Yellow Drake), Grey Drake (Brown Drake generally known as the "March Brown") and the Black Drake. The Green or Yellow Drake female is the sub-imago, as a short time later, the fly undergoes another transition, casting away the garb of pale greenish yellow and appearing in one of soft grey. The wings become more sparkling and iridescent, the segments of its body are more clearly defined, and the fly is more active in this, its final existence. It is now called the Grey Drake or imago. The Black Drake is the metamorphosis of the male Green Drake.

When the Green Drakes were on the water,

I have seen times on Penn's Creek, when it was absolutely impossible to get the attention of the fish, regardless of how closely the fly was imitated. At such times, the natural fly seems to be the only attraction, and many are the successes related of fishing with the same, when imitations had failed.

I have had great success on a fly I have tied myself, while trying to imitate the Green Drake. The body is of a pale, straw color floss silk, ribbed with silver tinsel; the extremities are of a peacock heel, with three fibres of a wood duck feather for stylets; the wings are the short curled and mottled breast feathers of a mallard duck, stained a pale green, and the fly tied fan wing style on a number ten or twelve hook. Brown trout especially like their flies dry and the imitation described above, is rated as one of my most successful creations.

Try tying one yourself and probably some warm spring evening, when the May Flies are winging their fluttering, fairy-like course, over the water—a pleasant surprise may be in store for you, as you connect with an "Old Brown," on the fly you tied from the above description.



LARVA



IMAGO

DRAKES.

SKETCHED BY THE AUTHOR
ALONG PENNS CREEK.

TRIES HIP BOOT FOR LANDING NET

Fishing fly in Vandermark Brook, Pike County, Ken Wolfe of Milford lured a big brown trout to strike. The brownie made things plenty lively for Ken before it finally was landed. Several times he had worked it into position for use of a landing net, but the only thing he had at hand on these occasions was his boot. It didn't work with the fighting brown trout at all.

Finally, his brother came downstream, and observing Ken's difficulty, ran to a nearby garage where he secured a landing net, and subsequently Ken's brownie. The big fish measured 19½ inches in length, according to Warden Frank Brink, and tipped the scales at 3 pounds, 2 ounces.

MASSACHUSETTS ANGLER ADVOCATES FLY FISHING FOR BASS FISHERMEN

In a recent letter to Commissioner Deibler, Freeman C. Hatch of North Andover, Mass., tells of his experience in fly fishing and just why he considers it the greatest form of sport at the disposal of the average fishermen. His letter follows:

"Please let me commend you on your editorial in the June issue of the 'Pennsylvania Angler' regarding 'Fly Fishing for Bass.'

"Four years ago I had never caught a bass of any kind, but moving into the vicinity of a large lake which was well supplied with both large and smallmouth bass, I decided to try my luck.

"I was outfitted with the regulation tackle.

Possibly my equipment was better than regulation as I purchased one of the well known steel casting rods, an anti-backlash reel costing more than a respectable watch, an eighteen pound test line and one or two of those monstrosities known as plugs.

"I was successful and how! I caught them in the belly, in the tail and anywhere else they happened to rub against these artificial porcupines. I did a slashing business of catching bass until the unhooking business became nauseating.

"The next year I didn't fish as often. There wasn't the fun in it. The only time I went for bass was when some friend wanted to go with me in my boat. I did the rowing and let him fish.

"Last year we had a dry spell, the lake became very low. Weeds that normally were three feet under water covered the surface. Plug casting was next to impossible. Nobody was fishing.

"One evening I took my fly rod to the lake and figured to practise casting a dry fly. With a six foot trout leader fastened to a number ten neutral colored bi-visible I started in. You know what happened. I caught, lost, muffed more bass than in any equal period before.

"I've destroyed the plugs. I've been saving my short trout leaders. I've gone completely over to the dry bass bug. I'm having more fun and 'DESTROYING NO FISH.' I heartily recommend a trial of this sport to fishermen who fish for fun and not meat."

RAYSTOWN SMALLMOUTHS

Those old-timers of the smallmouth bass clan in the Raystown Branch of the Juniata River apparently have a weakness for the lures of Walt Evans of Everett, according to Warden Bill Keebaugh of Hustontown.

Fishing in the Branch recently, Evans landed two big bass, one measuring 18 inches and weighing 3 pounds 4 ounces, the other 19 inches with a weight of 3 pounds 6 ounces.

Keebaugh, who patrolled Lake Gordon in Bedford county on the opening day, reported that the largest largemouth bass taken weighed four pounds.

FINE CATCH OF PERCH

Lake Koon, located above Lake Gordon in Bedford County, is furnishing exceptionally good fishing for yellow perch this year, according to a report of Lincoln Lender, warden at Bellwood. Frank Billmyer, of Cumberland, Md., recently caught 13 yellow perch ranging in length from 10 to 15½ inches.

MUSKIES FOR BREAKFAST

On the morning of July 2, first day of the open season for muskellunge, Charles Burdick, deputy game protector in Erie county, had a try for muskies in Lake LeBoeuf. Before breakfast he had taken two of these fine game fish, one weighing eight pounds, the other fourteen.

THE SUNFISH

By C. R. Buller

Deputy Commissioner of Fisheries

*"Slowly upward, wavering, gleaming
Rose the Ugudwash, the Sunfish;
Seized the line of Hiawatha,
Swung with all his weight upon it.*

*But when Hiawatha saw him
Slowly rising through the water,
Lifting up his disc refulgent,
Loud he shouted in derision
'Baa! Baa! shame upon you,
You are Ugudwash, the Sunfish;
You are not the fish I wanted;
You are not the King of Fishes.'"*

LONGFELLOW.

AS A rule this poem and the sunfish are equally well known and appreciated by the boy angler, for in nine cases out of ten the first fish to dangle from the hook and line of the small fisherman will be the sunny. The electric thrill of that first struggle with the gamey sunfish without doubt, in many instances, opens to childhood the door to the great wonderworld of fish and fishing. It might be said that this fish, like the egg rolling rights on the White House lawn every May Day, belongs to the little citizens.

What angler, casting for the lordly bass or pike, equipped with all the modern paraphernalia for its capture, has not seen the little barefoot urchins, perched on a log, or as far out on the edge of the marsh as it is possible for them to get, busily throwing in and baiting the hook with worms, carried in old tomato cans? Their tackle usually consists of black thread, "hooked" from mother's sewing basket, perhaps a bent pin for a hook, and any kind of a stick that they can lay their hands on for a pole. If you chance to ask them what they are fishing for, they will look at you in wonderment for asking such a question and answer, "Sunnies, of course." And the sight of these busy little fishermen will always bring back fond recollections of boyhood days.

The sunfish is one of the gamest of all fresh water fishes for its size, and as a pan fish ranks very high. While it might be called the boy's fish because of its gameness, it is commonly fished for by the grown angler. The tackle used in its capture is usually a light rod, hook and line. Sunfish are ravenous feeders and are ever in search of food to their liking. Consequently they are caught in almost any depth of water. They will bite on almost any kind of bait. The angleworm is probably the best for still fishing, but the grasshopper, white grub, small mussels, and small pieces of fish are also good. They will rise occasionally to the artificial fly. Sunfish travel about in groups or small schools and where one is captured, by a little patience, the angler many times may succeed in capturing the entire school.

The sunfish is well named as it certainly



SUNNIES AND YELLOW PERCH
ARE FAVORITES OF BOYHOOD

seems to appreciate the sun. On warm sunny days they collect in schools in quiet waters along the shoreline, swimming very near the surface, oftentimes with their dorsal fins appearing like miniature sails above the water line. If caution is used, one can approach very near the school, but when once discovered, as if from a given signal, a slight splash is heard and the entire group disappears, seeking the protection of deeper water. If undisturbed they will return in a short time to their place in the sun.

The food of the sunfish in their natural home is chiefly small forms of animal life present in the water. The larvae of various insects, some plant life and occasionally a small fish which may be a small individual of their own kind also provide forage.

Sunfish spawn in late spring or early summer, the spawning season extending over a period of from two to three months. By this it is not to be understood that the egg laying period of a single fish extends over this long a period, as when the nest is prepared, the actual egg laying period probably will not exceed a few hours.

In many of the sunfish, sexual maturity is reached at the age of about two years. The long extended egg laying period is no doubt due to early or late hatching of individuals. For instance, if a sunfish was hatched in August and attained sexual maturity at the age of two years, it would reproduce during the month of August. If another individual was born in May, it, no

doubt, when at the proper age would spawn during that month.

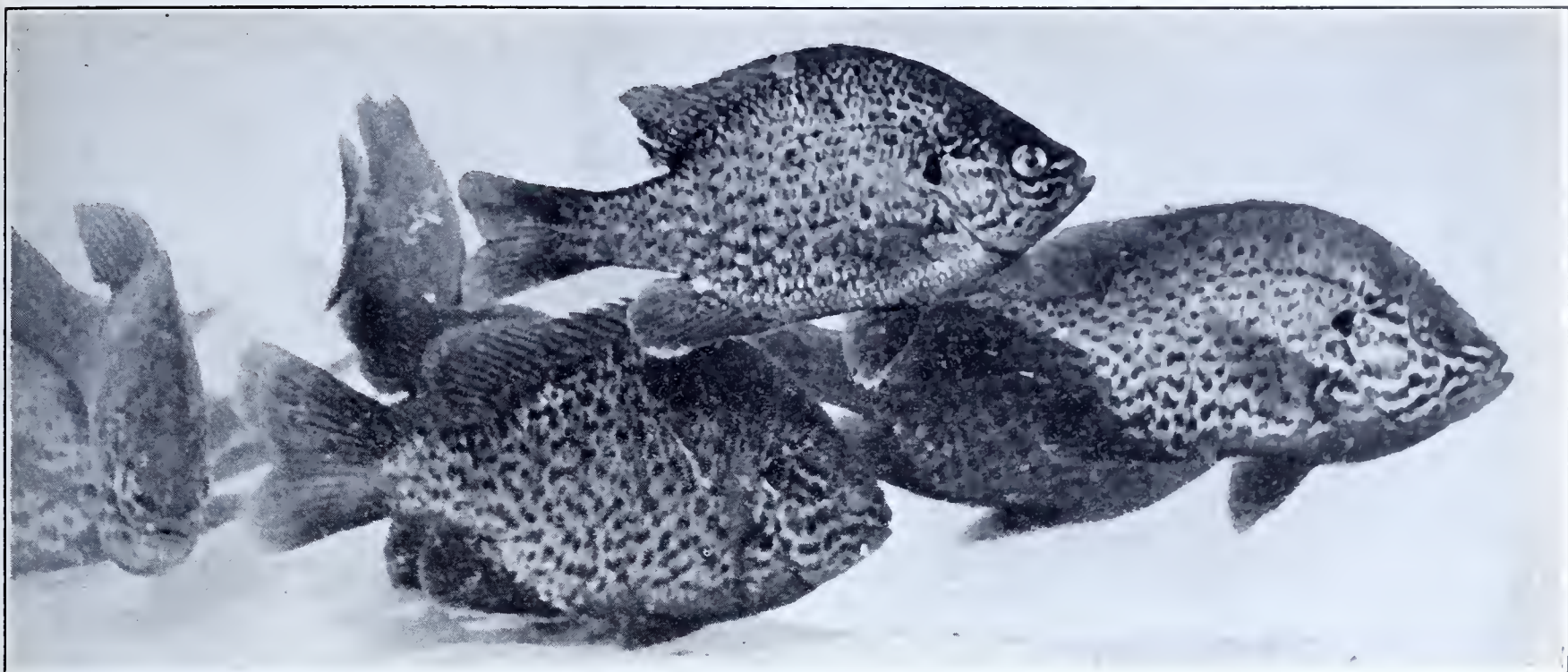
The male fish prepare the nest, which consists of a place in the shoal waters along the shoreline, oftentimes in from five to six inches of water. When the fish decide upon the location of the nest, the small stones are loosened with the snout and by a body and fin motion, all lighter sand and sediment is removed for a space varying from twelve inches to several feet in diameter. When complete, the nest will be a more or less circular place on the bottom, with only the large stones remaining. The female then enters the home, deposits the eggs, and leaves them and the young fish entirely to the care of the male parent.

The eggs of the sunfish are very small and adhesive or sticky. As they are extruded by the female, they cling to the clean surface of the stones in the nest. A female will deposit from two thousand to six thousand eggs, the number dependent upon her age and size. The per cent. of fertilization is usually large, but often nests will be located very close together, and where this is the case, the per cent. of fertilization is not so great, due, no doubt to the interference of neighboring fish during the spawning period.

The period of incubation varies from seven to ten days. At this time the parent fish is constantly guarding the nest from invasion of other fish, bent upon destroying eggs or young. Although the sunfish is small, it is possessed of wonderful courage and is well able to protect its home, even from the large carp or sucker. During the period of incubation and the early days of the life of the baby fish, all sediment and foreign substance is kept from the nest and a good circulation of water provided by the fin motion of the parent sunfish. If the foreign substance is too heavy to be washed from the nest, it is taken up in the mouth and carried away.

Many times this object may be the hook of a thoughtless fisherman, and the sunny, endeavoring to protect its nest, picks up hook and bait, not with the intention of eating it, but to carry it from the nest. Its capture results in entire loss of the nest of eggs or young fish, as neither the eggs or young fish can survive long without the parent's protection and care.

When the little fish first hatch they are so tiny that they can be seen only with difficulty by the unaided eye. When they break through the shell of the egg, they have attached to the lower portions of their body a tiny yolk bag or food sac. This provides food for the little fellows until they gain strength enough to leave the nest in search of food. By close observation, with the sun directly overhead, the bottom of the nest will appear like a mass of small diamonds scattered over the stones. These will be the



A GROUP OF COMMON SUNFISH. BOYS OFTEN CALL THEM "PUNKINSEEDS"

bright little eyes of the baby fish. For the first few days after hatching, the young will lie on the bottom of the nest being gently fanned by the fins of the parent fish. As they gain in strength they will swim nearer the water surface, and when evening approaches will settle back among the stones in the nest. The parent sunfish are constantly on guard to protect them from enemies.

If the same body of water is inhabited by the black bass, this is a trying and difficult task, as five or six hungry little bass will surround the nest. If one approaches too closely, the parent sunfish will dart at it. The little bass, being very quick and active, easily gets out of harm's way, but in the meantime the other bass have entered the home and devoured a number of the baby sunnies, getting out of harm's way when the parent sunfish returns.

When the yolk bag is absorbed the little fish leave the nest and protection of the parent sunfish and seek food along the shorelines or in the dense growth of aquatic plant life. Their chief food consists of tiny animal life present in the water. When first hatched, they will not resemble sunfish in shape, but by the time they are from six to eight weeks old, they can be easily recognized as sunfish. On sunny days they can be seen in small schools lying near the surface among the lily pads and aquatic grasses. When disturbed, they quickly settle to the bottom among the plant life.

In the United States there are between thirty and forty different kinds of sunfishes, all native to the fresh waters of North America. In Pennsylvania three different species are commonly found, either one or all being present in most of our lakes, ponds and quiet streams. They are known as the Common Sunfish, or Pumpkinseed, the Red breasted or Yellow Belly Sunfish, and the Blue Gill Sunfish.

The Common Sunfish

This little fish never attains a size large enough to satisfy any but the boy angler, yet it bites with a vim that makes one re-

gret that it is not larger. In the United States it is found from Maine to the Great Lakes and southward to Florida. It also inhabits the waters of the upper Mississippi Valley. It is a very beautiful and compact little fish, colored greenish olive above, shaded with blue and the sides spotted or blotched with orange, the belly orange yellow, cheeks orange with wavy blue streaks, and lower fins an orange color.

The Red Breasted Sunfish

This sunfish enjoys a wide range as it is found from Maine to Louisiana. It attains a length of from six to eight inches and is considered a good pan fish. In color it somewhat resembles the pumpkinseed, the two being very hard to tell apart, except by the trained student. It grows to a larger size than the pumpkinseed, body not as much elevated, mouth larger in proportion and black spot on the cheek much longer.

The Blue Gill Sunfish

The blue gill is the aristocrat of the sunfish family and most important of all true sunfishes. It is known by many different names, such as the Blue Bream, Blue Fish, Coppernosed Sunfish, Dollardee, and many others. It is found in almost all parts of the United States, either being native to the waters or introduced. As a food fish it is of much importance and of the sunfishes is the one most often seen on the market. It is the largest of the sunfish family, reaching a length of from ten to fourteen inches and as a pan fish, it is said to equal the yellow perch, as its flesh is firm and flaky, and possesses a delicious flavor. It also holds very high rank as a game fish and when a fair sized specimen is hooked, puts up a battle that will test the skill of any angler.

It is easily distinguished from the other sunfishes as its color is a greenish olive on the back, becoming pale on the sides. The top of the head is dark green, cheeks have a bluish tint, the spot on the cheek is a rich velvet black, the sides have three or four broad greenish bars and the lower fins are all greenish. Old individuals often have a coppery red belly. The young of the blue

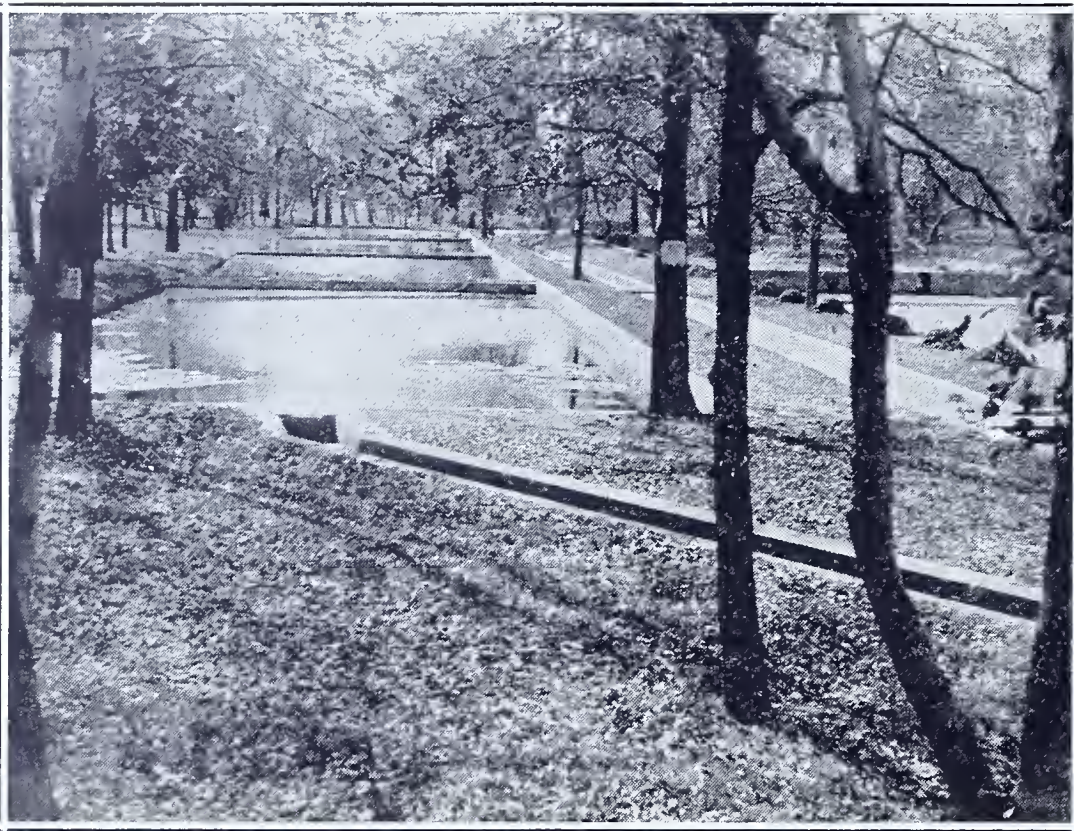
gill do not possess all the colors of a mature fish. Their sides are more or less silvery with vertical greenish bands.

Production of the blue gill sunfish at our hatcheries is an important feature in the Board's propagation program. At the approach of the spawning season for sunfish, a number of pairs of brood fish are allotted to each nursery pond. In order that the most favorable conditions obtain in these ponds, they are made as natural as possible for the adult fish. After spawning has taken place, the male sunfish hovers constantly over the nest. When the young have hatched, the parent sunfish are retained in the nursery ponds and are permitted to care for the baby fish in their own way.

Development of a hatchery strain of brood sunfish has been an important factor in raising sunfish under hatchery conditions. Accustomed as they are to conditions at the hatchery, mortality of the brood fish is comparatively light as compared to that attendant to introducing brood sunfish from wild waters. Each year, following introduction of this system of using hatchery-raised sunfish for brood purposes, has been marked by considerably less mortality among sunfish of all sizes retained.

The parental instinct in wild animal life has been studied for generations with keen interest, yet little is known as to what really endows the parents to do certain things for the best protection of their offspring. In the various fish families we have very striking contrasts. Some species will not hesitate to devour their own eggs or the newly hatched young, others take great care in the building of nests or homes, protecting the eggs and young fish from their enemies with a persistence that is to be greatly admired.

The sunfish is of the latter type. Just why nature endows the male sunfish with an instinct through which he places the value of his own life higher than that of the nest of unhatched eggs is not known. As soon as the eggs develop into true fish, the reverse is the case and he then places the value of the lives of the baby fish higher than



THOUSANDS OF SUNFISH ARE DISTRIBUTED EACH YEAR FROM THE PONDS AT TORRESDALE HATCHERY

that of his own existence. This has been frequently observed as one approaches the nest of eggs. The parent fish will readily seek protection by darting into deeper water, leaving the nest of eggs more or less at the mercy of enemies. When the little fish appear, however, he will not leave the nest at the approach of a foe but instead gives battle with all the vigor at his command to keep harm away from them.

The parental instinct in fishes seems to increase in proportion to the toll that nature intended to be taken upon them by enemies. The pickerel, for instance, has no parental instinct, giving the eggs or young fish no protection whatever. The baby pickerel makes its appearance in the water world early in the spring when there are few enemies present to destroy it. The sunfish make their appearance at the season of the year when they are readily preyed upon by the minnows, yellow perch, black bass, pickerel, and others of the same season's hatch.

In a natural state, sunfish are classed as shore feeders. By preference, they usually lurk nearer the shores of waters in which they are found, taking food that may fall to the surface such as grasshoppers, crickets and other types of forage. They also feed near or on the bottom on aquatic types of forage.

GOOD BOY, JIMMY

That Pennsylvania's boy fishermen are taking an ardent interest in conservation of fish as well as in fishing is illustrated by an incident reported to the ANGLER by Warden Charles Long of East Waterford.

Jimmy Patterson, 7 years old, has been making numerous fishing excursions to Tuscarora Creek, which flows through East Waterford. After digging some plump angleworms on May 19th, the youthful disciple invaded a sunfish pool and returned to his father's store with two fine sunnies, one 8 inches long. He was just as proud of those

sunnies as any trout fisherman would be of a creel of beautiful brookies.

The next Monday morning, bright and early, he was again at his favorite fishing spot. But on this occasion the sunfish were not accommodating and Jimmy returned to the store empty-handed.

"Where are the fish, Jimmy?" his father inquired.

"Darned if they'd bite today," came the answer. "But that's all right. If I'd get 'em all now, I wouldn't have any fish for next year."

A brown trout measuring 23 inches and weighing four pounds, one ounce, was taken from the Brokenstraw Creek in Warren county during the trout season by Milton Munn of Garland, writes Warden R. C. Bailey. Bill Miller of Spring Creek caught several brownies from 14 to 18 inches in length and a brookie measuring 13½ inches.

BIG BLUEGILL ENTERED IN FISHING CONTEST

The annual fishing contest sponsored by the Lappawinzo Fish and Game Protective Association of Northampton is now under way, and a number of fish have already been entered, according to Carl Fulmer, secretary. An unusually large bluegill sunfish, caught in Saylor's Lake by Ernest Benning of Bethlehem will certainly give any other entries in this class a stiff run for first honors. The bluegill measured 11 inches in length.

Saylor's Lake also provided another entry, an Oswego or largemouth bass measuring 17 inches and caught by Oscar Kresge, while Samuel Gougher entered a big smallmouth bass caught in the Upper Delaware.

A CORRECTION

THE ANGLER welcomes an opportunity to make this correction, for it concerns one of Pennsylvania's angling veterans who has probably accounted for more muskellunge, those fighting tigers of fresh water, than any man living. We refer to Fred J. King, of Waterford, Erie county. In the June issue, Mr. King's experience in landing a 17¼ pound muskie on an oversized "emergency" bait and losing another on the same bait was related in "Days Astream." In some way, the best feature of his experience, the taking of a 21½-pounder in addition, was omitted, hence the following correction. And the veteran muskie fisherman has indisputable records to back all claims. He writes:

"In my letter of January 16, 1934, relating this experience, I stated that on September 14, 1914, I caught one muskie weighing 17¼ pounds, and that on September 15, 1914, I caught another muskie weighing 21½ pounds, and that on the next day I had a strike from another but lost this one, all on the same 13-inch mullet for bait. In looking over my records to verify this yarn, I also find that on July 8, 1914, that I caught a muskie on another large bait, a 14½ inch white sucker. This muskie was brought to gaff in 15 minutes, after taking 30 minutes to eat the bait. This muskie weighed 32 pounds, length 51½ inches, girth 22½ inches."

In making this deserved correction, the ANGLER extends best wishes to Fred King for another successful season in fishing for the water tigers of Lake LeBoeuf.

FLASH FROM THE FISHING FRONT—WEASEL TAKEN ON FLYROD

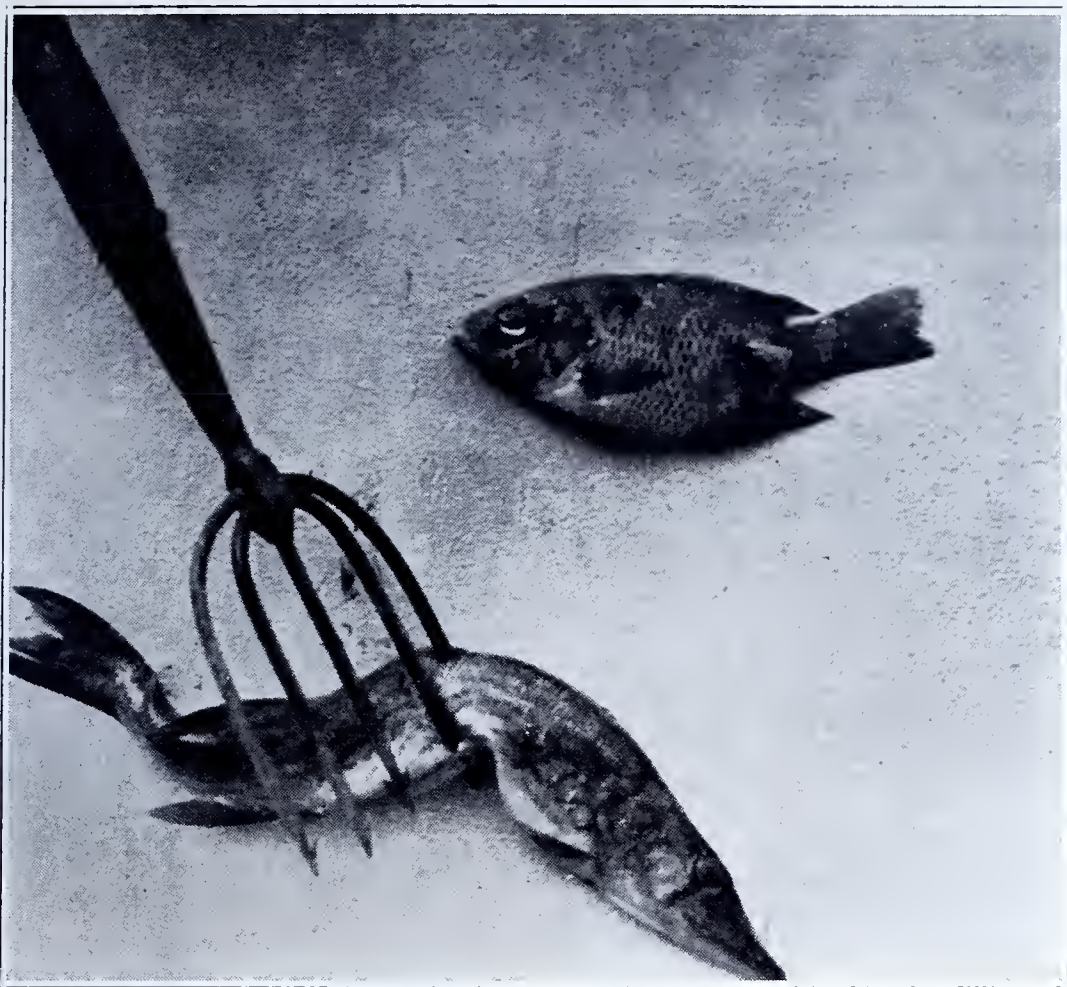
Berks county bass waters have produced the prize fishing experience of the year. For confirmation of this fact, consult Warden Bill Wounderly and Henry Blanford of Reading. Blanford, fishing in Maiden Creek, Berks county, below the Lenhartsville dam for bass on July 5, hooked and landed a weasel on a flyrod. The flyrod's list of victims not in the fish category now includes watersnakes, bats, chickens, and that most bloodthirsty killer for its size in the animal world, a weasel, a checkup on reports to the ANGLER reveals.

Coming back to the weasel episode, Blanford was fishing helgramite on a light flyrod for the fighting bass of Maiden Creek, when he observed a commotion and, fluttering in a group of young ducks a short distance downstream. Watching closely, he saw a weasel perched on a rock near the ducklings.

Quoting Wounderly:

"Blanford retrieved his line, cast for the weasel and hooked it in the neck at a distance of 20 feet. He still had a helgramite on the hook with which he had been fishing for bass. Just who would be victor in the struggle that followed was in question for half an hour, but eventually the fisherman won out by drowning his unusual catch as it struggled in the water to free itself from the hook.

"Blanford told me later that he never experienced such a tussle as the weasel gave him. To use his own words 'those critters sure can give you one real battle.'"



JUST TWO OF THOUSANDS OF REASONS WHY THE SPEAR OR GIG IS AN ENEMY TO GOOD FISHING

HALF-PINT FISH EGGS, SIX BLUEGILLS, BASS TAKEN FROM SNAPPER

In Genesee county, Ivan Kesten, conservation officer, organized spearing groups for the purpose of ridding Buell and Hassler lakes of as many noxious fish as possible.

The spear was wielded so efficiently that 17 carp and 26 dogfish of a combined weight of 330 pounds were taken. Whenever a turtle came into view, the members of the group tested the sharpness of the tines on its armored back. So successful were they that 14 turtles, scaling 130 pounds, were removed from the lake.

Kesten examined the stomach contents of one of the turtles to determine the type of food it had eaten. He found six small bluegills, a black bass and a half-pint of fish eggs.

Such data, which indicates that the snapping turtle preys upon the fish life of the lakes and streams, is being gathered by the Institute for Fisheries Research, University Museums, Ann Arbor. The Institute, of which Dr. C. L. Hubbs is director, is making a study of fish predators in Michigan.

In Michigan there is an open season the year around on snapping turtles.—*Michigan Department of Conservation Monthly Bulletin*

Ollie Narnhold of Middleburg ranks as one of the ace watersnake hunters in Snyder county. A recent report placed the number of snakes killed by Ollie this year at 80. Every one of the reptiles had either fish, frogs or tadpoles in it.

NORTH BRANCH CATCHES

The North Branch of the Susquehanna River is living up to its reputation as one of the outstanding bass waters of the eastern seaboard this year, reports indicate. Early season bass catches were uniformly good, and the best creels were taken according to Warden Myron Shoemaker, who patrols the Branch, in the swifter water, riffles and eddies. While the deeper pools are best for autumn fishing, Shoemaker advises trying the shallower water early in the season.

Leonard Wilbur and a companion from Wilkes-Barre had taken thirteen nice smallmouths by noon of the first day. An unusually heavy catch of wall-eyed pike was made by Joe Connor and party of Pittston. Trolling, they caught 24 big wall-eyes, the largest 29 inches in length and the others averaging 21 inches.

Wyalusing Creek also yielded fine catches of bass. Twenty-one fishermen interviewed had taken on an average four bass apiece.

AN EFFECTIVE WAY TO KILL WATERSNAKES

Lloyd Cook of Meyersdale has devised a unique method by which to kill watersnakes, according to Warden Link Lender, Bellwood, Lake Gordon, his favorite fishing ground, is noted for its largemouth bass, and Cook follows a popular method of taking the big fellows, namely by plug casting at night.

Two items other than his bass fishing paraphernalia are also taken on these fishing trips. One is a powerful flashlight. The other is a wire with a loop on the end.

Every once in a while he stops casting long enough to throw the beams of the flashlight over the water. Spotting a snake, he approaches it quietly in the boat, slips the wire noose over its head, and presto, the snake is in an instant no longer an active menace to fish.

On the night Lender met him, Cook had already killed six watersnakes in this way.

BEAVERKILL GOOD

The beaverkill ranked as an A-1 bet for fishing north Tier waters early in June, according to Warden Horace Boyden of Wellsboro. Boyden also said that while fishing with the ginger quill, he caught eight fine brook trout. One of the trout was 11 inches in length, two were 10 inches, and three ranged from seven to nine inches.

FISHING CONTEST IN YORK-ADAMS COUNTIES

Simultaneously with the opening of the bass season, the York and Adams Counties Game and Fish Association announced the start of a contest in which prizes will be awarded for the largest game fish taken during the 1934 fishing season.

Prizes will be awarded for the biggest smallmouth black bass, the biggest pike and the biggest rock bass. Second and third prizes will be given in the black bass and pike classes. In the smallmouth bass competition, first prize will be \$10 in merchandise or credit at the Hanover Hardware Company's store. Second prize will be \$5 in merchandise or credit and third prize \$2.50. In the pike class, merchandise or credit slips will be given as follows: First, \$5; second, \$2.50; third, \$2. The prize in the rock bass division will be \$5 in merchandise or credit.

The contest will be limited to fish caught in the legal season in the State of Pennsylvania, with rod, reel and line. No specific lure is required. Competition is open to everyone—men, women and children, members and non-members of the game and fish association. All who desire to enter the contest must be registered on or before August 1, at which time the register will be closed. Persons who have registered will be the only ones eligible for prizes. No fish caught from a state, club or private hatchery will be eligible for entry.

An affidavit blank will be given to each person registering upon receipt of a 25-cent registry fee. The blank must be signed by the person catching the fish and by two witnesses who examined the fish and verified its weight and measurements. Herbert V. Jordan, Wilson C. Jordan and Donald Michael will serve as judges. The length, girth and weight of each fish entered must be included in the affidavit, together with data regarding when and where it was caught and the type rod, reel, line and lure or bait used. All fish must be weighed on tested scales at the Hanover Hardware store, and must be measured with a tape measure.

Your fly casting line should be dried thoroughly after each trip astream. Run it through a soft cloth to absorb excess moisture before it is put away.

DAYS ASTREAM

A Section Contributed by Readers of PENNSYLVANIA ANGLER

CONQUERS SNAPPER ON FLY-ROD

by

JOHN C. MUSSER, Columbia

Fishing in Kerbaugh's Lake, a landlocked section of the Susquehanna river, about a mile north of Columbia, early in May, George Shinton, a Columbia fisherman, landed a fifteen pound snapping turtle, but only after a State Policeman from the Columbia barracks came to his aid. The feat was more remarkable considering the fact that Shinton was using a four ounce fly rod when he made the catch.

When the turtle struck, Shinton knew something large was on his line and at first thought he had hooked a large bass. However it moved too slowly for a bass and he then thought it was one of the large carp which make their home in the lake in great numbers.

He played his catch carefully, fearing the strain would prove too great for his rod. However his fishing skill (he is the type of fisherman who makes his own rods and flies) came to his aid and in half an hour's time his quarry began to surrender, but stubbornly.

An additional fifteen minutes were necessary before he had the turtle close enough to shore to identify it. Then his troubles began. Mr. Turtle when he was dragged so close to shore that his head was above water propped his four feet on the rocky bottom and refused to budge. He called for help and State Trooper, Cyril Edwards of the Columbia barracks who was on the fishing party ran to his aid.

He offered all sorts of vocal aid but when he saw that the small hook Shinton was using was slowly straightening out he lived up to the slogan of "always get your man," leaped into the water up to his waist, grabbed the turtle beneath the shell and tossed him to the bank.

The turtle was sixteen inches long from the front to the back of his shell and with its head and tail extended measured almost thirty inches. Across the back it was fourteen inches wide at the widest point. It weighed several ounces over fifteen pounds.

Others on the fishing party besides Shinton and the state trooper were James G. Hinkle and J. Leroy Myers, also of Columbia.

AND THEY WEREN'T ROCK BASS, AT THAT

by

RALPH W. ROBERTS, Sharon

While spending a few days along the Allegheny fly fishing for bass, I had a very unusual experience, one of those you will look back to in years to come.

Opposite camp there was an island, the lower end of which formed a long sand bar, well covered with weeds at this season of the year. The water cutting across this bar

made a channel 3 to 4 feet in depth, with many large rocks, just the kind of a place you expect to find a big fish or two waiting for you. This was ideal fly water and I liked to fish it in the evening, fishing down stream before dusk with a streamer fly and a No. 1 spinner and back to camp after dark with a bass bug. This would usually produce two or three nice size bass.

The first evening in camp my companions and I were fishing up stream on the far side of the island, when just before dusk I noticed quite a commotion off the lower end of the bar some distance below us. From where we were it looked as though there were forty or fifty fish that would come to the surface and go down, this would be repeated at very frequent intervals and last for about fifteen minutes.

Thinking this to be a school of rock bass at play, I jokingly suggested to one of my companions, Dr. Millison, that he go down and cast it out and determine the cause of all this disturbance. On his return he reported quite excitedly that he had two strikes, but, had been unable to hook either one of them. Dal and I smiling to ourselves told him he had a delusion as they were only rock bass.

The second evening I was fishing downstream when I noticed three fly fishermen working up towards me. They were just opposite the lower end of this bar when the same school of "rock bass" started cutting capers. I could hear one man say to the others that there were bass feeding and to get out to them with their flies. They apparently couldn't reach them as nothing happened and from my location I was still satisfied that they were rock bass.

The next, my last evening on the river I had worked down opposite the lower end of this bar and had taken a little time out to smoke my pipe and wait for it to get a little darker before working back towards camp. While smoking and meditating I noticed just off the lower end of the bar my school of "rock bass" were again in session. I watched them for some little time not paying much attention to them as I certainly had not given it a thought other than they were rock bass. It just looked like a great many minnows or rock bass sucking small insects from the surface of the water.

As it had now become dark enough for me to work back towards camp, I waded out as far as I could and for curiosity's sake dropped my cork bug right in the midst of my school of "rock bass." Just then things began to happen. The whole school seemed to go for my bug at the same time. After several attempts one big fellow crowded his way through and nailed it and was I excited; I had a nice 13½ inch smallmouth bass and in the seven succeeding casts I landed five bass as nice as you would care to lay eyes on and had two others hooked but did not land.

This had given me more than my share for one night and when I finally attracted the attention of Dalton Hardy, my other fishing companion, who was then working up my way using a casting rod, I told him of my experiences and suggested he might still arouse them with a surface plug which he did and caught two more beauties and had three other strikes he missed.

Now I know my Doctor friend was telling the truth. They were not rock bass.

I see now that bugs were hatching on the weeds and bass in great numbers had gathered there to feed.

HUNGRY OR CRAZY?

by

GEORGE W. CONWAY, JR., New Castle

I have not had a great deal of experience with trout, but one incident which happened May 25, this season, was really remarkable.

I was fishing with two friends, one of them had never even seen a trout before this occasion. He caught two trout that day however, and I arrived on the scene just after he had lost a third. Along with that trout went one of the hooks I had given him.

He had no idea what size the trout was and I tied another hook on his snell and forgot it. Since he had also caught one of his two trout in that same hole, we moved on for they had stopped biting there.

On this particular day we had both minnows and worms, a worm being the bait he had on when he lost fish and hook.

This happened about 5:00 in the evening. Sometime between 7:00 and 7:30 the same evening I came back to the hole where the fish had been lost for I thought there might be others there.

As soon as my bait hit the water a fish took it and I caught him, it was my seventh and last for the day. (Five of the seven were taken on minnows.)

When I got no more from that hole I stopped fishing and cleaned that fish which was exactly nine inches. The other fish I had cleaned when caught. Then I got a surprise for in its stomach I found the hook I had given to my friend and it was still baited with a good sized garden worm. I am sure that the hook was the one he lost a couple of hours earlier in the day for if it had been in the fish's stomach much longer than that, the worm would have been digested. It was the same size and shape hook, and as we did not see another person on the stream that day it must have been the one he lost.

I have heard of other cases where hooks or flies or such things have been found in fish but I can't see why a trout who was on the end of a line once in a day and only escaped would grab another in two hours. He must have been very hungry or slightly crazy.



JUST BEFORE THE LANDING NET. FRANK DUNKLE OF YOILLE PLAYING A BASS ON THE ALLEGHENY

THE FARMER'S SIDE IN THE POSTED LAND ISSUE

One careless fisherman, disrespectful of the rights of a landowner on whose property he is permitted to fish, often will spoil the sport for hundreds of others. The farmer who posts his property frequently is driven to it by acts that tinge on vandalism.

Van L. Swikert, who owns a farm in Wayne County, has presented the farmer's side very ably in the following letter to the *ANGLER* headed "Posted Property and the Cause." He writes:

"Perhaps some of you real sportsmen would like to know just why some of the farmers post their property. Let me give you something of the farmer's side in the case. I am a farmer, also an officer of the law, and live beside one of the finest trout streams in Wayne County. This stream runs through my property and is open to the public. Here is just one experience I have had.

"A short time ago, a big car drove up in the driveway in front of my garage, so that I could not have gotten my car out had I wanted to. The men in it did not have decency enough to ask if they might fish, but walked across my lawn, jumped over the wall beside the creek and started to fish. Then they came in at noon, ate their lunch, and away they went. Well sir, you ought to have seen the mess they left. They turned their car around on my lawn and left it in wonderful condition, and where they ate their lunch they left papers, bottles, bait cans, orange peels and other rubbish all over the place. When they came back a few days later, believe me they got an earful. I ordered them off my place and told them to keep off. I believe any man or party of men who do things like that are not deserving of the right to fish on a self-respecting man's property.

"This is the type of fisherman who embitters the farmer and makes him anything but pleasant when real sportsmen come along. I have a nice place, take a lot of pride in keeping it nice, and it takes a lot of work to keep it that way. Then to have some cheap skate come along and mess it up just naturally riles me. Fellows like this have no consideration for anyone but themselves and they are the ones who make it hard for decent fishermen to get along with farmers. Unless such men are curbed, the farmers eventually may be forced to post many streams in the county, just to protect their property. In hunting, too, unpleasant things often happen. I have had hunters go through my property and tear down two or three rods of stone wall to get a rabbit, leave it and go on. Let that sort of thing happen two or three times during a season and it means two or three days work laying up these walls.

"Believe me when I say that, as a class, farmers are a first rate bunch of fellows. They are not mean and hard if they're used right, and they are willing to meet you halfway. Common sense dictates that when a fisherman finds his sport on another man's property, he should use it as his own. And why not? It is quite possible that he is using it for this particular purpose even more than the owner himself. If this rule is followed, I honestly believe that in most instances, no trouble will arise between sportsmen and property owners."

Keep stone catfish or helgramites on the move while fishing them. Both of these natural lures will seek the first rock crevice available, and broken hooks or lines may result. Some anglers use a cork in keeping stone catfish off the bottom.



STILL-FISHIN'

Fish Commission Sponsors Campaign Against Watersnakes

PENNSYLVANIA boys are key figures in the Fish Commission's campaign to thin down the number of watersnakes this year, Oliver M. Deibler, Commissioner of Fisheries, has announced. Appropriate medals will be awarded to each Boy Scout or any boy, who kills ten or more of these destructive reptiles and furnishes proper proof of his achievement.

Simple rules govern the snake-killing campaign now under way. Any Boy Scout who kills his quota of snakes will report the killing to the scoutmaster in charge of his troop. In turn, the scoutmaster will notify

C.C.C. BOYS IMPROVE STREAMS

Boys stationed at the C.C.C. camp located on Straight Creek, Elk County, have been active in stream improvement work this summer, according to Warden Robert J. Chrisman of Kussequa. Straight Creek and South Forks are the streams in which the improvement work has centered. Thirty-seven well-built dams have now been placed in Straight Creek.

TRY COCKROACHES

Just give Lowie Foyson of Steelton a supply of good fat cockroaches and he'll be satisfied that a catch of bass is in the offing. And to back his belief that you can't beat cockroaches as bait, Lowie returned from a recent fishing trip to Hawk Rock on the Susquehanna with as nice a smallmouth bass as any angler could desire. It measured 17½ inches in length and weighed two pounds, 11 ounces, according to Warden Frank Sanda of Steelton.

Lowie says that the cockroach is one of the most active baits he ever used, buzzing about on the surface with a persistence that is almost certain to attract bass.

STANDS IN ONE SPOT, LANDS 18 BROWNIES

A pool in the Tobyhanna Creek provided unusual trout fishing for A. S. Burnaford of Blakeslee one day in midseason, according to Warden Russell Womelsdorf of Kingston. Casting dry fly without moving from the spot where he started fishing, Burnaford caught 18 brown trout ranging in size from 10 to 12 inches. Two days before, he took 17 brownies from 10 to 12 inches from the self-same pool.

Have you lost your "pcp"? Try fishing.

the Fish Commission and the boy will be given a fine medal inscribed "Junior Conservationist." A boy who is not a member of a Scout troop will be awarded a medal if he reports, on his honor, the killing of ten snakes to a fish warden, game warden, or official of a sportsman's organization. A snake, to be entered in the total killed, must be twelve inches long.

It is believed that a great many boys, who have taken keen interest in the killing of watersnakes to better Pennsylvania fishing, are already qualified to receive one of these Conservation Medals.



WM. PINKERTON, 12, OF FAIRMOUNT PARK, PHILADELPHIA, WITH A "STRING" OF WATERSNAKES

TROUT FEATURE JUNE STOCKING

Brook and brown trout above legal six-inch size featured the stocking program of the Fish Commission during June. The hatcheries restocked approved trout waters with 114,200 trout.

In addition to 81,500 brook trout from 8 to 9 inches in length and 32,300 brown trout, 7 to 12 inches, 400 rainbows were released.

Following are the streams stocked in the various counties:

Adams—trout, Conococheague Creek.

Berks—trout, Swamp Creek, Northwest Branch Perkiomen Creek, Hay Creek, Pine Creek or Oysterdale Creek.

Blair—trout, Blair Gap Run, Bald Eagle Creek, Piney Creek.

THIS BROWN TROUT WANTED MINNOWS

Big brown trout apparently want a mouthful when they go to the trouble of striking. On more than one occasion, you'll hear fishermen on certain famous brownie waters say that almost all of the trout over 20 inches in length are taken on minnows or night-crawlers. After an experience on Bald Eagle Creek, on May 7th, Irving Martin of Bellefonte, may be inclined to agree with them.

A 22-inch brownie in one of the famous Bald Eagle pools tempted Irving, and in trying for a rise from the big fellow, he used every pattern of flies in his possession. But the trout in question turned up its nose at the fragile lures.

Finally Irving resorted to different tactics. He put on a minnow, the brownie struck it savagely and was forthwith landed.

Bradford—trout, Schroder Creek.

Butler—trout, Blacks or Furnace Run, Bear Creek, Little Connoquenessing Creek, Thorn Creek.

Cambria—trout, Saltlick Run, Chest Creek.

Cameron—trout, East Branch Hicks Run, Lushbaugh Run, Sinnemahoning Portage Creek, Hicks Run, Clear Creek, Mix Run, Driftwood Branch.

Carbon—trout, Aquashicola Creek, Quake Creek, Hays Creek.

Centre—trout, Spring Creek, Logan Branch, Penns Creek, Wallace Run, Pine Creek, South Fork Beach Creek, White Deer Creek, Laurel Run or Synagogue Stream, Elk Creek, West Branch Big Run, Penns Creek, Bald Eagle Creek.

Chester—trout, Doe Run, Two Log Run, Buck Run, Pusey Run, White Clay Creek.

Clarion—trout, Mill or Big Mill Creek, East Sandy Creek, Toms Run, Deer Creek, Big Mill Creek, Piney Creek.

Clearfield—trout, Little Laurel Run or Beach Run, Mountain Run, Wilson Run, Medix Run, West Branch Montgomery Creek, Lick Run.

Clinton—trout, Tangascootack or Scootack Creek, Lick Run, Big Fishing Creek.

Columbia—trout, Mugser Run, West Creek, West Branch Fishing Creek, Fishing Creek.

Crawford—trout, Sandy or Little Sandy Creek, McLaughlin Run.

Dauphin—trout, Manada Creek.

Delaware—trout, Ridley Creek.

Elk—trout, East Branch Clarion River, Bear Creek, East Branch Spring Creek, Maxwell Run, Straight Creek, Paiges Run, Spring Creek, Wolf Lick Run, Kersey Run, Big Run, Vineyard Run, Mix Run, South Branch Straight Creek, Wyneop Run, Bear Run, East Branch Hicks Run, Hicks Run, Big Mill Creek.

Eric—trout, Beaver Run or Beaverdam Run, South Branch French Creek.

Forest—trout, Prathers Run, Little Salmon or Indian Doctor Creek, Salmon Creek, Spring Creek.

Franklin—trout, Conococheague Creek or Each Branch Conococheague Creek.

Hunlingdon—trout, Shaver Creek, Little Aughwick Creek, Standing Stone Creek.

Indiana—trout, Little Yellow Creek, Mudlick Run.

Jefferson—trout, Camp Run, Clear Run, Little Sandy Creek, South Branch of North Fork Red Bank Creek, Five Mile Run, Camp Run, East Branch Mahoning Creek, Little Mill Creek, North Fork Red Bank Creek.

Juniata—trout, Lost Creek.

Lancaster—trout, Indian Run, Big Chickies Creek.

Lawrence—trout, Taylor Run, Little Nesannoek Creek, Big Run.

Lebanon—trout, Big Chickies or Pen Run, Bachman Creek.

Lehigh—trout, Little Lehigh River, Cedar Creek, Trout Creek.

Luzerne—trout, Linesville Creek, Bolward's Run, Little Shickshinny Creek, Nescopeck Creek, Wapwallopen Creek.

Lycoming—trout, Lycoming Creek, Lyeoming or Antis Creek, Slate Run.

McKean—trout, East Branch Tionesta Creek, Portage Creek, Potato Creek, Marvin Creek, Willow Creek, West Branch Clarion River, Two Mile Run, North Branch Sugar Run, South Branch Sugar Run.

Mercer—trout, Wolf Creek, Little Sandy Creek, Lackawannock Creek.



BOB GILCHRIST AND OAKLEY MENHENNETT WITH WALL-EYES FROM LAKE COMO, WAYNE COUNTY. LARGEST PIKE, 6 POUNDS

Mifflin—trout, Kishaeoquillas Creek.

Monroe—trout, Big Bushkill Creek, Buckhill Creek, Lehigh River.

Northampton—trout, Little Martins Creek, Saucon Creek, Bushkill Creek.

Pike—trout, Red Rock Creek.

Potter—trout, Long Run, Sartwell Creek, Nelson Run, South Branch Oswayo Creek, South Fork of First Fork of Sinnemahoning Creek, Lyman Run or North Branch, Corbet Branch, Bailey Run, Trout Run, Allegheny River, Oswayo Creek, Pine Creek.

Sullivan—trout, Sullivan Branch, Lewis Creek, Ogdonia Creek, North Branch Mehoo-pany Creek, Rock Run, Roek Run or Rocky Run, Pigeon Creek, Little Loyalsock Creek.

Union—trout, Corl's Run, White Deer Creek, Penns Creek.

Venango—trout, East Sandy Creek, Cherry Run, Upper Two Mile Creek.

Warren—trout, Little Brokenstraw Creek.

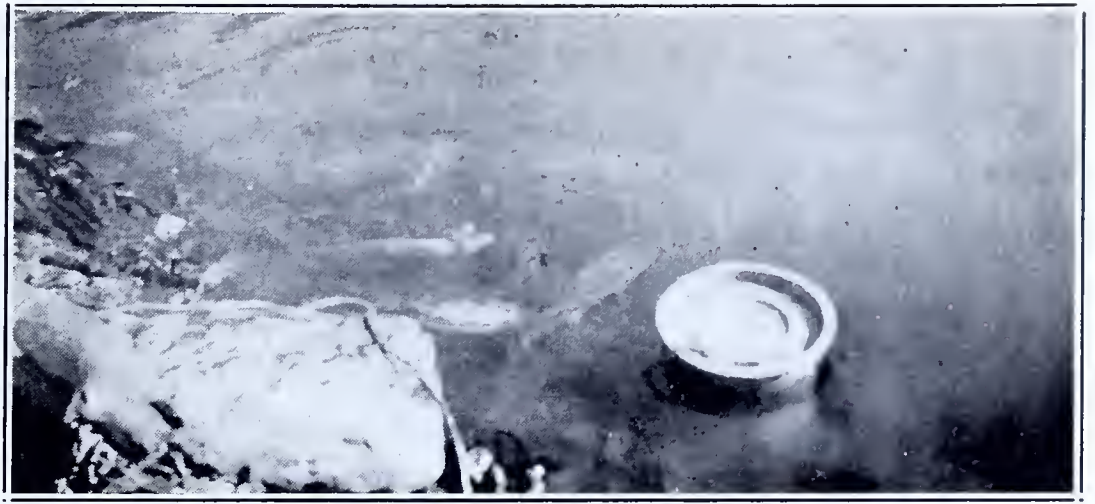
Wayne—trout, Calkins Creek, Beaverdam Creek, Wilcox Creek, Johnson Creek, Equimunk Creek, West Branch Lackawaxen River.

York—trout, Leibs Creek, Otter Creek.

NEW TRAP EFFECTIVE IN WATERSNAKE CONTROL

A fair analysis of the watersnake and its habits, weighing any good qualities it may possess against its destructiveness to fish life, leads to its conviction as an outstanding enemy to the sportsmen in their efforts to better fishing in Pennsylvania. Snake-infested streams and ponds yield a heavy toll of all species of fish to this voracious reptile each year. Their rapid increase constitutes a threat to the drive for good fishing that may not be taken lightly. The best time to kill watersnakes is during July and early August, before they have given birth to young.

An effective device for thinning down these reptiles is a watersnake trap that has been adopted and used successfully by members of the Eastern Anglers Association of Monroe and Pike Counties. This trap is easily constructed and may be used on many streams and lakes. In principle, it is a square box, the upper surface consisting of a balanced lid. This lid is pivoted in the center at both ends of the box, in such a manner that a slight weight on either side will cause it to tilt, dropping an object into the box. On both sides of the box are screens, giving a clear view of the inside. It is most effective when placed beside a log or other object near shore that is used as a summing place by watersnakes. A dead minnow or other bait placed on the center of the lid may serve as an effective lure.



LIVE-BUCKET AND A STRING OF BASS. THIS PHOTO WAS TAKEN ON THE RAYSTOWN BRANCH

GOOD TROUTING IN COLUMBIA COUNTY

In a recent letter to the ANGLER, A. A. Allegar, special fish warden of Berwick, calls attention to the fine trout fishing provided by Fishing Creek in Columbia County.

"Want to call your attention to our trout fishing in Fishing Creek here to Columbia County," he writes. "During the 1933 trout season, I saw numerous catches of from 10 to 20 brook trout, ranging in size from eight to 14 inches. These trout had been taken on the dry fly. Some large brownies were also caught. I fish in a number of the streams in the Commonwealth, and I find Fishing Creek as good as the best."

BIG TROUT CAUGHT

The closing days of the 1934 trout season in Pennsylvania were marked by splendid catches of big trout on Pine Creek, Potter County, the Lackawaxen, Wayne County, and Wapwallopen Creek in Luzerne County, according to Nick C. Ratamess, special warden at Berwick.

Fishing in Pine Creek below Galeton, Ratamess caught two brownies, one 24½ inches in length, the other 17½ inches. The larger trout weighed, dressed, two pounds and 12 ounces, and the smaller dressed at one and three-quarters pounds.

The Wapwallopen yielded a creel of 18 fine trout to Joseph Marsicano. One of his catch measured 18 inches and two others each 16 inches in length. Peter Randone of Wilkes-Barre creeled 19 big trout from the Lackawaxen in a day's fishing, the smallest measuring 11 inches in length and the largest 19¼ inches.

Big brown trout, when they strike a minnow, usually settle to the bottom for a short time, somewhat after the fashion of a pickerel that has just struck a natural lure. Give them plenty of time before setting the hook.

During at least a week or more in every trout season, grasshoppers and crickets make excellent bait for trout. The grasshopper, yellow bodied, is more firm than the cricket, and can be cast and floated much as is a fly. To fish a cricket effectively, float it with the current and don't try casting it too much.

Don't neglect the reel. A drop or two of oil in the bearings after a hard day astream is often advisable, particularly if it has fallen into the water.

LANDS BIG BASS

Franky Peters of Gallitzin will tell you that those old bronzebacks of the Raystown Branch of the Juniata can put up a battle from start to finish. Fishing in the Branch on the evening of July 3, not far from Huntingdon, he landed a black bass weighing 6½ pounds. And since this stream is predominantly smallmouth water, it is possible his catch was of this species. At any rate, it will take a monster to trim it for the season record. Displayed at Gallitzin, the big bass attracted a lot of attention.

STREAM IMPROVEMENT PROJECT UNDER WAY

Sportsmen of Williamsburg, Blair County, are determined that trout streams in their section shall be brought to a peak in productivity, and an active stream improvement campaign, modeled after the Spring Creek project, has been undertaken. The work has been concentrated on Big Piney Creek, Blair County, one of the outstanding trout waters in that section. Stone wall and log deflectors placed at suitable locations are expected to be vital aids to trout in the stream during the low water periods this summer. While Big Piney has never been known to go dry, this improvement work ranks as an important step in the Blair County drive for better fishing.

So much interest has been aroused in this enterprise, it has been reported, that a number of new members have joined the Williamsburg sportsmen's association to participate in the work.

ONEIDA DAM LARGEMOUTHS

The Oneida dam in Butler county is furnishing great fishing for largemouth bass again this year, according to Special Warden J. H. Bergman of Butler. Casting plug for the big fellows has resulted in some outstanding catches.

Topping the reports is a catch of bass by Alex Skinder of Pittsburgh, five in number, having a combined weight of 20 pounds. Four of the bass measured 18 inches apiece while the fifth measured 16 inches. Joe Curtis of Butler caught 10 bass on the first day measuring from 13 to 19½ inches. The largest bass weighed 4½ pounds. Clyde Guiney of Butler, R. D. 1, landed three bass, each measuring 19 inches in length.

Other bass waters in Butler county that attracted many fishermen when the season opened were the Big Conoquenessing Creek and Buffalo Creek. One of the catches reported from the Buffalo was that of Ray Strong of Kepple, who landed three smallmouth bass measuring from 13 to 15 inches.

TO STAGE INTENSIVE DRIVE ON WATERSNAKES

At a recent meeting of the Salisbury-Meyersdale Sportsmen's Association, an active campaign against the watersnake was planned. It was decided to pay a bounty of ten cents for every watersnake killed, covering the period from June 28 to July 10, both dates inclusive. Rules regulating the payment of this bounty required that any person making a claim should present at least five inches of the tail of a watersnake prior to 6 o'clock Tuesday evening, July 10.

BOARD OF FISH COMMISSIONERS HARRISBURG, PA.

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HERE ^{A_ND} THERE IN ANGLERDOM



George Cross, special warden at Renovo, heads a recent report of trout fishing in his territory as "The Biggest Catch and the Smallest Catch." The best catch, Cross said, was made by Tom Mosier, district game protector in Centre county, who creeled five brown trout while fly fishing. The smallest brownie taken measured 17 inches, and the largest 22 $\frac{3}{4}$ inches. Fishing at the headwaters of Youngwoman's Creek, Arthur Logue, Coudersport, Bill Foote, Roulette, and Henry Quick, Germania, all with the Game Commission, caught five brook trout, and invited Cross to a "trout dinner." The five trout averaged 6 $\frac{1}{2}$ inches in length.

Perkiomen Creek has yielded some fine catches of bass this season, in spite of the low water, according to Warden J. Clayton Reed of Ambler. Alfred Moor of Center Valley landed a largemouth bass measuring 20 $\frac{1}{2}$ inches in length and weighing five pounds. W. W. Robinson of Schwenksville caught a big smallmouth bass weighing four pounds. It was 19 $\frac{1}{2}$ inches in length. Both bass were taken from the stream between Oaks and Green Lane.

Fishing in Kettle Creek during the waning days of the trout season, Ed Sheesley of Harrisburg caught five brown trout of which any angler might be proud. The largest, 20 inches, weighed 3 $\frac{1}{4}$ pounds, and was taken on a minnow. Runnerup was a 16-inch brownie taken on a locust. Two other trout in the catch each measured 14 inches, while the fifth measured 13 inches.

Writing from Twin Lakes, Pike county, Frank V. Stutsman reports great fishing for yellow perch. John Dietrich, A. Lewis Sherman and Bernard Brown, all of Reading,



ED SHEESLEY, HARRISBURG,
DISPLAYS A NICE PICKEREL
FROM THE YELLOW BREECHES

caught thirty big perch in a day's fishing. Two-thirds of the catch measured over a foot in length and some topped sixteen inches. Fourteen big bullhead catfish added variety to the catch. Some exceptionally large red suckers were also taken this year in the Pike county lakes. The two largest weighed by Stutsman tipped the scales at

five pounds, 14 ounces, and five pounds respectively.

Two fine brown trout were taken from the Kishacoquillas Creek in Mifflin county by E. L. Alexander of Belleville. Each trout weighed three pounds, one measuring 20 $\frac{1}{2}$ inches and the other 19 $\frac{1}{2}$ inches.

An ardent advocate of conservation, W. J. Getman, superintendent of the Middleburg silk mill, has laid down a rule that any person in his employ guilty of violating the fish law or the game law will be dismissed immediately. Warden Charles Long reports that Mr. Getman recently learned of the use of a set net by one of his employees. Until the net was destroyed, he said, the man could not come back to work in his mill. A 15-inch watersnake captured a short time ago by the Middleburg sportsman was found, when opened, to contain a large chub and a catfish.

Rock bass and sunnies are the realization of more than one boy's fishing dream. Leonard Bartilkowsky, of Wilkes-Barre, all of seven years old, caught fifteen big rock bass in the North Branch during a day's fishing. Russ Womelsdorf, warden, tells us that Leonard was one happy boy on that eventful day.

LANDS CARP

While fishing at Cook's Deep Hole, between Burkett's Bridge and Way Bridge on the Raystown Branch of the Juniata, William Foot of Everett, R. D. 2, recently caught a carp measuring 31 $\frac{1}{2}$ inches in length and weighing 15 pounds. Harry Moore, special warden of Hopewell, reported the catch.

TO ALL FISHERMEN

Will you kindly answer the following questions and return to PENNSYLVANIA ANGLER, Fish Commission, Harrisburg, Pa.

By filling this out you not only will be helping this Board but you will be supplying statistics which will mean more service and better fishing.

WHAT FISHES DO YOU PREFER TO CATCH?

1. 2. 3.

WHAT METHOD DO YOU PREFER?

Fly Plug Bait

DO YOU FISH AT NIGHT?

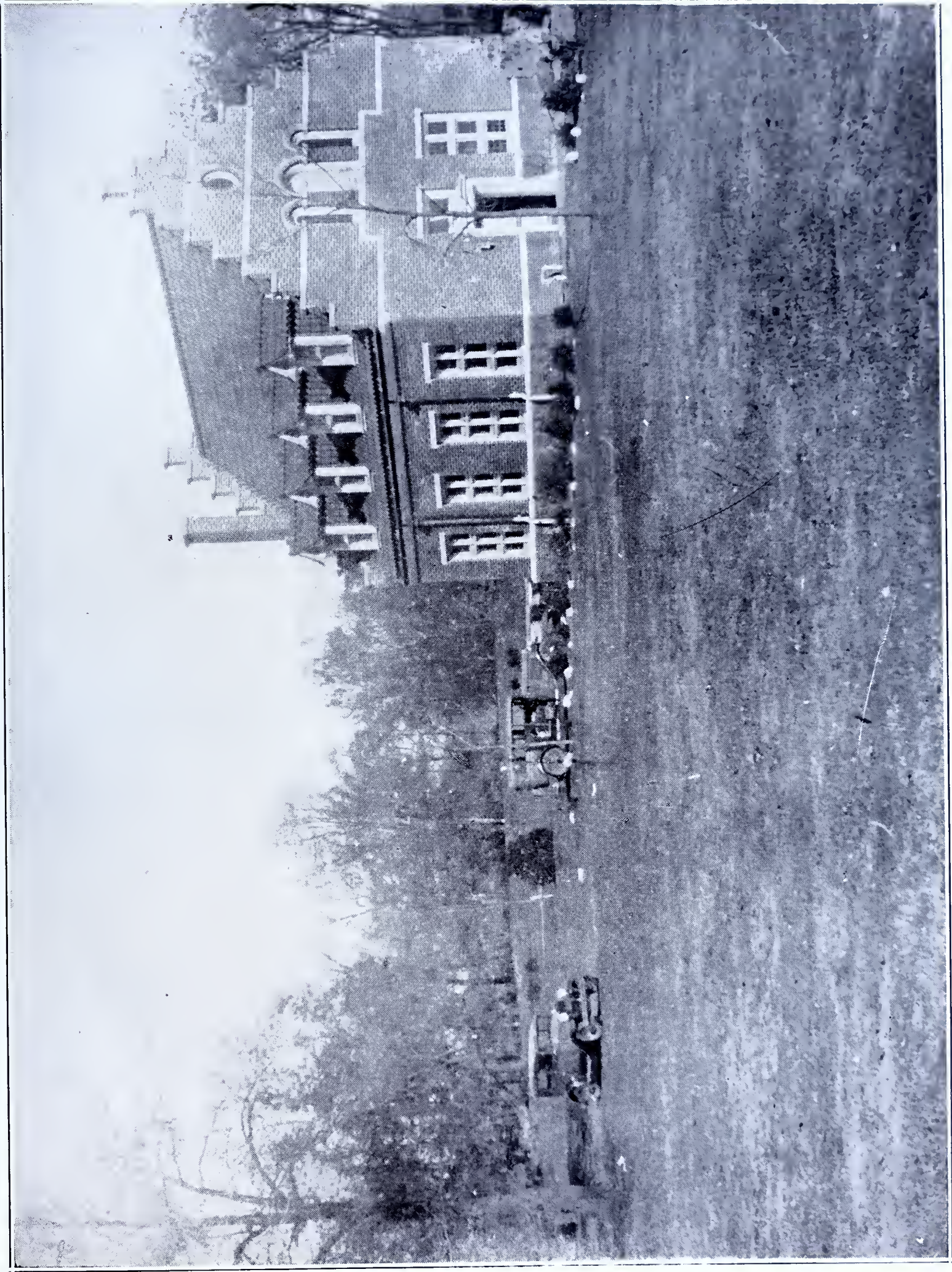
Bass Trout Others

NUMBER OF FISH CAUGHT 1934?

Bass Trout Others

Name Address

License No. County



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PENNSYLVANIA ANGLER



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A PERKIOMEN WATERSNAKE

PHOTO BY LAMAR MUMBAR

VOL. 3
NO. 9

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BOARD OF FISH COMMISSIONERS

SEPTEMBER
1934

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SEPTEMBER, 1934
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PENNSYLVANIA ANGLER welcomes contributions and photos of catches from its readers. Proper credit will be given to contributors.

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PENNSYLVANIA ANGLER

SEPTEMBER, 1934

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EDITORIAL

Crush the Violator

Crush the fish law violator and enjoy better fishing.

Following discovery of evidence in several instances of seining and dynamiting in our streams, the Fish Commission is making a determined drive to break up this destructive practice. The dynamiters and seiners of our inland waters, although comparatively few in number and limiting their activities to sections difficult of access, today loom as a real menace to the fisherman's sport.

With a large force of fish and game wardens to combat illegal fishing, every possible cooperation on the part of sportsmen is essential to breaking up fish law violation. Prompt reporting of cases to wardens in their vicinity by fishermen is necessary. In some instances, it is believed, violators attempt to sell fish caught by illegal methods, and when such an attempt is made it should be immediately reported to the nearest fish or game warden.

A few men, fishing with illegal devices, nets, seines, or dynamite, may ruin the sport of thousands of fishermen. Generally such violations occur under cover of darkness. If dynamite is used, or lime, not only the larger fish in the pool, but small fish and minnows are destroyed. Fish not wanted are left to drift away.

Trout in meadow and mountain streams have little chance to escape netting activities of the violators. Limited size of the pools in which they live does not give the fish much opportunity to elude netters. Giggling or spearing fish

at night also takes heavy toll in larger streams.

A wave of indignation on the part of fishermen rightfully follows each violation of the fish laws. It is their money that restocks the streams each year for betterment of the sport, and the illegal fisherman is in every sense of the word robbing them.

The fact that, by actual count at the hatcheries, over 1,000,000 trout above legal size were distributed last year, and many thousands more this spring, is proof of the sincerity of the Fish Commission in its drive for better fishing. If the streams are left to the honest efforts of anglers in taking these trout, good fishing is that much nearer attainment.

Builder Sportsmen

Pennsylvania fishermen today must regret the ruthless slaughter of fish life in our streams that marked the nineteenth century. A period when seines, trapnets, and spears devastated inland fishing waters in sharp contrast to modern conservation of our aquatic life. Slight consideration was given to the fact that vast hordes of fish could not survive this ruthless extermination, and the killer's code predominated. Farsighted sportsmen of the era viewed with alarm this unparalleled waste of our fish and wild life. Their views, however, were given credence only when the slaughter was terminated by a well-organized group of men inspired by the sportsman's code.

The past has taught a grim lesson and that lesson is being applied today in our efforts to provide better fishing in Pennsylvania. I believe that a trite saying known to many of us—"You cannot eat your cake and have it, too,"—serves to illustrate the point. When the supply of fish and game was ebbing rapidly away during the nineteenth century, the belief prevailed that the "cake" never would be consumed. That the remnants of a magnificent natural supply of fish and wild life was saved in time may be attributed in large part to realization by the public that drastic steps to halt the slaughter were necessary. The Fish Commission is now engaged in a vast restocking program to bring back to the greatest possible extent fishing compar-

able with that of seventy-five years ago. Behind that program, backing it man by man, must be the sportsmen of Pennsylvania. It is essentially their program and it stands or it falls according to their dictate.

This issue of sportsmanship is, I believe, the most vital factor in our program. Incident after incident portraying the splendid spirit of our Pennsylvania anglers has come to my attention this year. Many of our fishermen are demonstrating the true sportsman spirit during trips astream. No longer is the skilful angler judged by the number of his catch. Instead, his angling ability should and is being measured by the yardstick of sportsmanship. Real thrill in angling rests in the game fight a battling trout or bass can provide in its bid for freedom. In other words, the angler-conservationist considers the sport of fishing paramount, the size of the catch secondary. He takes home only the number of fish that can be readily eaten by his family.

Sportsmanship on our streams means a square deal for every fisherman in Pennsylvania. Restocking waters alone cannot restore fishing comparable to that of seventy-five years ago. A constantly growing army of anglers invade the inland fishing waters each year. They are guardians of this splendid sport. The Fish Commission, their representative, is financed by their fund, the fisherman's license fund, and in large part, this money goes directly to restocking streams and lakes depleted by heavy catches. When a fisherman is unsportsmanlike in taking fish, his act is injuring not only his own sport but the sport of hundreds of his fellow anglers. The angler's greatest contribution to the sport he cherishes is to play the fishing game according to the rules that govern it. Fine, clean sportsmanship, sportsmanship that takes into consideration the thought of building, not destroying, the supply of fish now available in our waters, is necessary.

I am firmly convinced that this type of sportsmanship will spell success in our better fishing program. We need builder-sportsmen.



Commissioner of Fisheries.

SPAWNING GAME FISH

SWOLLEN into torrents of brownish water by heavy spring rains, one of Pennsylvania's greatest bass and wall-eyed pike streams is verging on flood stage. Two weeks before, great masses of ice churned through its riffles and eddies, and since the break-up of the ice jams, even its smallest feeders and "wet weather" streams have poured bank-full into the river.

In a great eddy formed by the juncture of one of the larger creeks tributary to the main stream, thousands of fish have gathered. Predominantly, they are suckers, ready for their spawning run up the creek. Just when the run will start is dependent upon the rise in water temperature which determines to a large extent the ripening of the eggs in the female fish.

Mingling with the sucker horde, however, are a number of big, spindle-shaped fish. Known under many names, but more particularly pike-perch, wall-eyed pike and Susquehanna salmon here in Pennsylvania, their spawning time is coincident with that of the sucker run, in early spring. In a week or two, these pike will move up the creek to spawn. Of the inland water game fishes, they perhaps are least known insofar as reproduction is concerned.

When they start their spawning run, the pike must buffet a heavy current to reach their objective in the shoal waters of a quiet section of the creek. For the active and strong male fish, this task is not particularly difficult. But for the females, encumbered as they are with eggs, the strength of the current is sometimes too great to overcome. Failing to attain their goal, the female pike frequently are forced to deposit their eggs in unsuitable locations. And as the males have in many instances forged ahead, these eggs are often not fertilized. Even if they are, the heavy current soon covers them with silt and mud or sweeps them away.

It is believed that the pike-perch under normal spawning conditions gather in groups in the shoal water. Spawning completed, they abandon the eggs and return again to the deep, rock-bottomed pools in which they are found during most of the year. So hardy are the baby pike that they require no parental care, and considerable success has attended stocking them, while in the fry stage, in suitable waters.

As the waters of the spring freshet sweep through the reed-fringed flats of the creek, graceful, slender fish that have been active



PICKEREL

throughout the winter start moving up tiny runs on their spawning migration. By pairs, these eastern chain pickerel enter shallow tributaries of the stream and even drainage ditches to deposit their eggs. Perhaps there is method in the apparently careless tendency of the voracious stream pickerel to seek spawning grounds of this type. The tiny pools of the run harbor few fish enemies of the baby pickerel, and later, barring the possibility that it is a "wet weather" stream, these same pools will furnish food enough for the young in the form of small organisms and tiny minnows.

Like the pike-perch, the pickerel desert their eggs after they are spawned, letting the young shift for themselves. It is not unusual on some of the creeks having pickerel in central Pennsylvania to catch a large number of young in a scoop of a minnow net in a shallow back eddy of a stream. This leads to a belief that even small weed-grown bays on such streams and in ponds may be resorted to by the pickerel at spawning time. Young pickerel are very delicate and an apparently slight injury may result in death. It is an interesting coincidence that the comparatively few eggs deposited by an adult female (from 1000 to 2000), and the delicate nature of the fry may be offset in large part by the care taken in choosing a spawning ground in which the most favorable conditions for growth of the infant fish obtain.

Spawning Bass

Emerging from a state of semi-hibernation when water temperatures of stream and lake rise during April, the black bass enter into an orgy of feeding. Literally gorging themselves on minnows and other live forage, smallmouth bass of swift, rock-bottomed streams, and largemouths in weed-grown ponds and lakes are conditioned for their spawning by the latter part of May or early June.

Preparatory to spawning, the male smallmouths have selected suitable spots on gravel bars or, at the bases of rocks and logs for the nests. Late May finds them vigorously fanning away silt and sediment until the spawning places are ready for the eggs. Then a-courting they go. A female accompanies each male fish back to the nest, and after depositing the eggs, leaves the household duties to the sire. An amazing change has taken place in the active and voracious male. When it assumes guardianship of the nest, covering a period of from seven to 14 days, all of the aggressiveness that marked its driving rushes for minnows two weeks earlier seems to have merged into a jealous protective instinct. Hovering over the eggs it keeps them clear of sediment by a fanning motion of its fins. Should a blundering carp or sucker venture near, it is met by a slashing attack from the bass unmatched in ferocity. Almost any object, large or small, brings a furious onslaught from the parent fish if it approaches the vicinity of the nest. Unscrupulous fishermen at this particular time may do irreparable damage by taking big bass from the nest, for removal of the parent results in the total loss of eggs and young. Fortunately, the present laws governing bass fishing protect the fish over this crucial period.

After the young fish are hatched, the guardianship of the male continues until they are ready to leave the nest. Increasingly voracious after this long vigil, the male again reverts to the killer and will not hesitate to devour as many young bass as he can find. He might rightfully be termed the "Jekyll and Hyde" of the water world.

While smallmouth bass are spawning in streams of Pennsylvania, a similar chapter is being enacted by the largemouth bass in ponds and lakes. Approximate times of the nesting of the two species may vary slightly. Save for a tendency to deposit their eggs



WALL-EYED PIKE

in tiny coves of aquatic vegetation, the largemouths carry through a very similar spawning process to that of the smallmouths, and the largemouth male, guarding its nest and young, is every bit as devoted to its task as is its cousin in the faster creeks and rivers. Not infrequently, both species of bass will be found in the same body of water and in such cases, spawning habits differ but slightly.

Autumn Spawners

There is a tang of frost in the air, and the leaves are turning in color when the big brook and brown trout stage their annual spawning migration. Generally, the time is late October or November, and fortunate is the fisherman who can be on a good stream to observe the pilgrimage of the mottled kings.

During October the adult trout of both species have displayed increasing restlessness. Chill autumn nights and a general drop in water temperatures have heralded the approach of their spawning time. Under primitive conditions in Pennsylvania, the native or brook trout is believed to have been a fish that spawned on an even temperature of the water. Trout waters generally were subject to little variation in temperature during the year. Their source, cold deep-seated springs of never-failing flow, and the shade of giant trees arching above them were factors that aided in holding the water at an even or possibly very slightly varying temperature the year round. Today, conditions have changed radically. The great forests have fallen before the relentless advance of the sawmill, many of the cold feeder springs no longer exist, and most

of our trout waters are subject to wide variation in temperature during the year. For this reason, the modern brook trout or charr and the imported brown trout may be said to be fishes that spawn on a falling temperature of the water.

Observation on several outstanding trout streams in Pennsylvania has revealed an interesting fact relative to the spawning of brook trout and brown trout when the two species inhabit the same stream. The brookies spawn first, usually from one to two weeks before the brown trout ascend to the spawning grounds. Their mission completed, they hurriedly drop downstream again, leaving the brown trout in undisputed possession of the spawning areas. Coincident with spawning activity of both species, considerable fighting occurs; and in the event of the mingling of brook trout and brown, the larger and heavier fish of the latter species undoubtedly would create havoc with the smaller brook trout.

As the big trout move upstream, their dorsal fins show above the surface in shallow riffles; the male fish cut smoothly through the water, the females, heavily laden with eggs, more sluggishly. Arrived at the spawning ground, some small pool far up in the main stream or in a spring fed tributary, the male hovers over a selected spot on a tiny bar of pebbles or gravel, its pectoral fins swiftly fanning the nest. When all sediment has been removed, the female deposits the eggs, the male fertilizes them, and both fish leave the spawning bed for their downstream migration. Under favorable conditions, in wild streams, trout fry hatch in from 90 to 120 days.

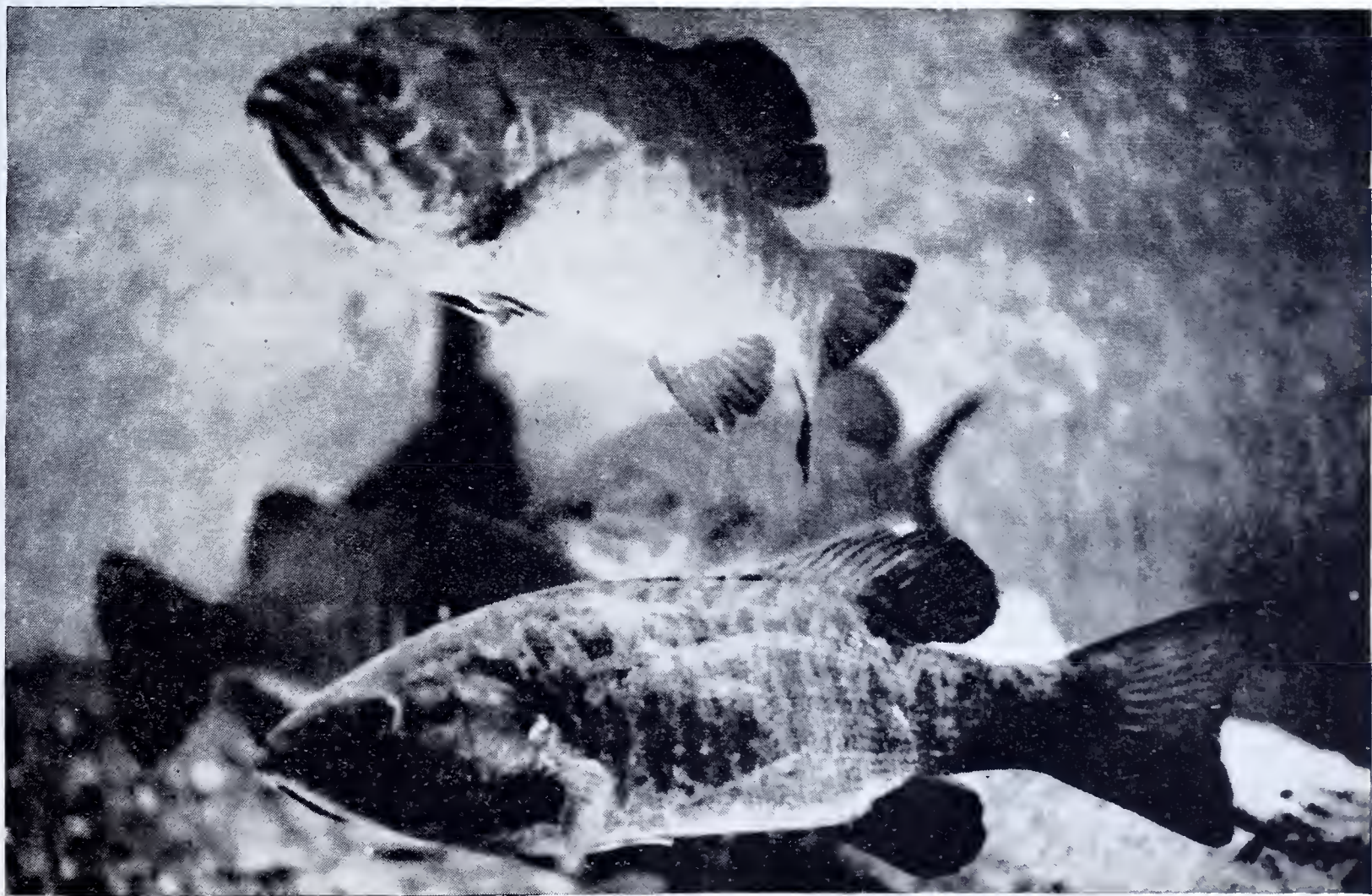
It is significant that many of the trout above legal size stocked after the close of the season from the hatcheries are potential spawners and participate in the spawning run. In this way, they rank as an important factor in aiding natural reproduction in our trout waters.

Spawning time for the rainbow trout, that popular fighting fish introduced to Pennsylvania waters from the Pacific slope, comes in our waters usually in the spring. There is some reason to believe however, that their spawning season may extend into the summer and even autumn when the rainbows have lived several generations under Pennsylvania conditions.

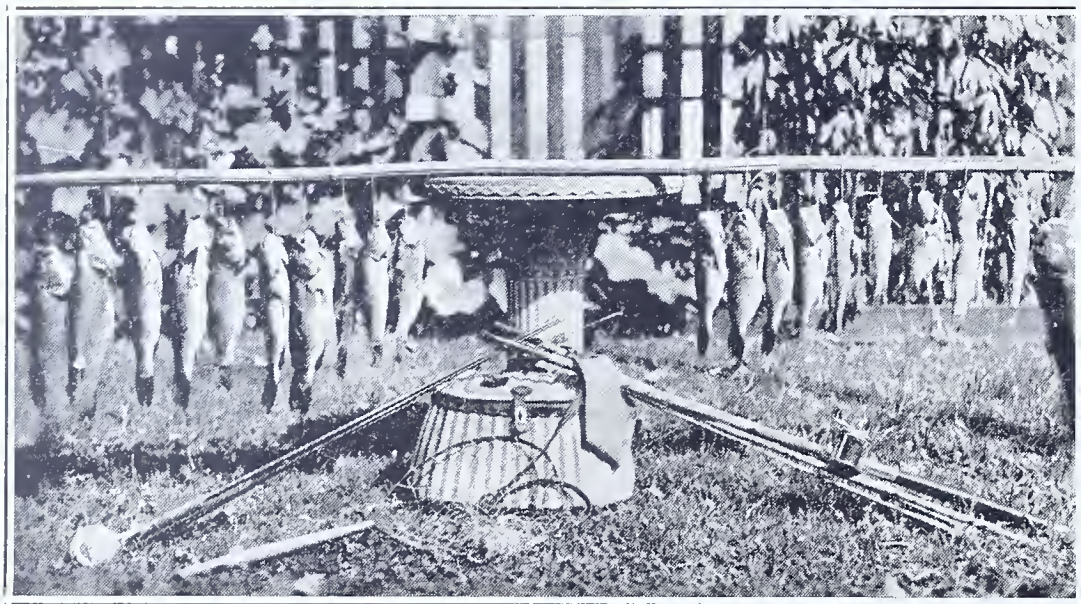
Fish life affords many fascinating topics for observation and the game fishes of our streams and lakes present no more interesting study than that linked with their spawning activities.

WALLENPAUPACK BROWNIES

Famous for the great catches of pickerel, bass and wall-eyed pike it provides each year, Lake Wallenpaupack in Pike and Wayne counties also yielded some unusually large brown trout during the trout season, according to Warden John A. Schadt, Jr., of Lake Ariel. Two brownies, each 24 inches in length, and another measuring 17 inches, comprised the catch of Robert Hunsicker of Glenside. Art Gumble of Paupack landed a brownie measuring 28½ inches in length and weighing 6½ pounds. Four brown trout taken by Pep Singer of Paupack measured 19½, 22½, 23, and 21 inches respectively.



SMALL MOUTH BASS



ED MOUND, CHARLEROI, MADE THIS TWO-DAY CATCH OF BASS, ROCK BASS, AND CATFISH IN TEN MILE CREEK, WASHINGTON COUNTY

LIVE TROUT CONTEST AT LEHIGH OUTING

Fishermen and hunters from all over Eastern Pennsylvania had a big time on July 28th, when the annual field day of the Lehigh County Fish and Game Protective Association was held at Dorney Park near Allentown. The attendance was estimated to have been over 3000, the great majority of them sportsmen. The all-day program was featured by a number of contests in which fishermen were given an opportunity to show their skill. One of these was a novelty, live trout, 10 to 20 inches in length, being used. Over 500 of the brookies, brownies and rainbows were impounded in a space, 400 feet long, in Cedar Creek, which flows through the park, and the contestants competed for prizes for the largest fish caught and for the most trout landed in a five-minute period.

Ernest Benninger of Bethlehem won the trophy for the largest fish caught. It was 15½ inches long. Fred Geist won second prize and Alton L. Best third prize. F. A. Brown took the trophy for catching the most fish in five minutes, landing them at the rate of one a minute. P. G. Platt, president of the Izaak Walton League of Pennsylvania, supervised the fly casting contests. A. L. Best won in the competition for accuracy, with 94 points, with Mr. Platt second, and Harry Grantz and G. J. Grantz, father and son, tied for third place. G. J. Grantz won the contest for distance with 62½ feet to his credit. Mr. Platt was again second and N. J. Tobias third. Barbless hooks were used in the contest.

Kermit Ache won the plug casting contest with 75 points for accuracy; H. J. Diehl, second, and William Sheridan, third. In the distance match Mr. Sheridan cast the plug 525 feet, with H. J. Diehl second, with 442 feet.

Other features of the day included pistol matches and trap and skeet shooting. There was also an exhibit of wild animals by the State Game Commission and fish and game moving pictures.

Keep flies and feathered lures away from house moths.

A RECORD WALL-EYE FROM WALLENPAUPACK

They've been catching some big pike-perch or wall-eyed pike at Lake Wallenpaupack this year, but the catch reported by Harold D. Koch, secretary of the Lehigh Sportsmen's Association tops the list. Writes Mr. Koch:

"Fred Spogen, of Lehigh, a member of the Lehigh Sportsmen's Association, gets the credit for catching one of the nicest fresh water fish ever caught in this section.

"While fishing in Lake Wallenpaupack Freddy landed a mammoth wall-eyed pike. It measured 31 inches in length, girth 17 inches, and weighed 11¼ pounds.

"Fred Singer at 'Peps' landing on the Wallenpaupack says it's the nicest fish taken out of the Lake in the six years he has been there."

RECORD SPORTSMEN'S RALLY

Sportsmen of Westmoreland and neighboring counties attended the annual picnic held at Idlewild Park near Ligonier and pronounced it one of the finest gatherings of outdoorsmen ever held. Over 8500 people participated in the huge rally which was featured by bait and fly casting, a dog show, skeet shooting, prone rifle shooting and a baseball game. Motion pictures of former sportsmen's outings were shown in the evening to conclude the program.

In the bait and fly casting contest over 100 anglers participated. F. M. Robb of Latrobe won first place in casting event No. 5, with his son William Robb taking second place.

APPLIED GEOMETRY

The geometry teacher asked the class what a triangle was. Johnny, who had gone fishing with his dad, piped up, "I know, teacher, if the fish won't take a fly, try an angle worm."

WHY PICK ON FISHERMEN?

The man who recently invented a lie detector tried it out on a fisherman the other day. He hasn't decided whether to try to repair the machine or build a new one.—*Los Angeles Times.*

PROUD!

"Dotie" Biazzo of Water Gap was one of the proudest boys in Pennsylvania on the first day of the bass season. Fishing in the upper Delaware, "Dotie," who is 12 years old, caught a 28-inch wall-eyed pike that weighed five pounds. Warden Joel Young of Fullerton reported the catch and said that 72 fishermen interviewed the first day had taken 32 largemouth and smallmouth bass, 76 sunfish, 39 yellow perch averaging 10 inches in length, 14 wall-eyed pike from 12 to 28 inches in length, 18 pickerel from 12 to 22 inches, 14 suckers, and 150 eels.



Seth Says

I reckon as how there's one big pike in our crick thet'll live to a right old age. Not more'n a week back I had hold o' him, an' by gorry he tangled up my

riggin' so all-fired bad thet I lost hook an' all. An' don't think thet old bird ain't got a reputation about these parts with the boys. He's jest about as cagey when it comes ter gettin' away as thet old speckled trout I been tryin' fer the last two seasons.

Well, comin' back ter the pike, he's a whopper of a old chain-sided feller, well over two feet long. Jerry Tims claims as how he's been hangin' out by a dead tree in the crick nigh onto five years an' I ain't sayin' nay ter Jerry. Thet pike knows every tree branch in the tangle an' there he heads when he feels a hook. Anyhow, when the crick was clearin' after one o' them hard rains we hed, I got a hankerin' fer a little pike-fishin'. So I gets me a few lively chubs about four inches long, takes the cane pole an' in a jiffy was right at the place fer pike. The crick was milky, jest right. My riggin' ain't got much class but it ketches fish. The pole's about 12 feet, an' the line's most heavy enough fer any average fish. Fer fishin' I use a stiff wire, fastened onto a swivel, with a loop at the other end. I jest shove the wire through the minnie, put on a double hook so thet both points lay close along the minnie when it's pulled up so there's a little kink in it. Ef a pike's hungry, he goes fer thet whirlin' chub like he means ter take part o' the line ter boot.

Fishin' goes along right nice 'till I gets where the old feller hangs out. I hed caught two nice pike, one o' them about 18 inches an' lost another. An' then, jest opposite thet windfall, I come close ter havin' the pole yanked out o' my hands. Well, I give him plenty o' time turnin' the bait an' when he starts a-movin' away, sets the hook. Durned ef I didn't figger I was hooked inter the bottom o' the crick. I was aholdin' on fer dear life, tryin' ter stop thet fish but it wasn't no use. He headed inter the tangle like a scared weasel inter a groundhog hole, an' in two shakes I was so tangled up with pike an' brush thet the scrap was over. His teeth cut right plumb through the line, an' thet's the last I was in touch with him.

I figger any fish as cagey as thet most oughter get away.

PYMATUNING DAM IS DEDICATED



GOVERNOR PINCHOT AT PYMATUNING

The vast economic and recreational advantages to be derived by the people of Pennsylvania and eastern Ohio through the construction of the Pymatuning Reservoir in Crawford County and eastern Ohio were stressed by Gifford Pinchot, Governor of Pennsylvania, in dedicating this vast body of water on August 17th. Before thousands of people gathered at the dedication, Governor Pinchot stressed the important part Pymatuning already has played in the industrial life of the Beaver and Shenango valleys during the drought this summer, and its importance as an outstanding asset in conservation.

Of major importance from a conservation standpoint is the stocking program inaugurated at Pymatuning last spring and now being pushed vigorously forward.

"This body of water," Governor Pinchot declared prior to the dedication, "will be richer in fish food than any other lakes in the east. Already the Fish Commission has planted 44,000,000 pike perch and yellow perch. Many more millions of bluegills, catfish, sunfish and largemouth bass will be released in the lake this year. There will be thousands of sites for public and private camps; there will be plenty of bathing beaches.

"At the Pymatuning dam, the Commonwealth of Pennsylvania has done a model job of conservation, flood control and drought prevention, in addition to providing one of the finest outing places in America.

"It is one of my fondest hopes fully realized."

"PLANT A WILLOW" IS DR. SEYLAR'S SLOGAN

Hon. Leslie W. Seylar, McConnellsburg, member of the Board of Fish Commissioners, urges that fishermen help the sport along by planting a willow twig at every opportunity when fishing on a favorite stream.

More willows mean better fishing, Dr. Seylar said. Not only are the trees beneficial in helping to conserve moisture, but their interlacing roots provide ideal protection for trout.

It is a comparatively easy matter to plant willow twigs at any moist spot along the stream, he said. The twigs take root quickly, and their rate of growth is rapid.

Catfish Hits Spinner

Those bullhead catfish of Lake Wallenpaupack not only grow to large size but apparently are developing sure fire game qualities according to Warden Anthony Lech of Shenandoah.

Lech informs us that Clyde Stryker, highway patrolman from Schuylkill Haven, recently had a real fishing surprise when he caught a 14-inch bullhead on a spinner while fishing for pickerel, bass or other game fish in the lake near Hawley.

WOMAN, 65, ENJOYS FISHING AT NIGHT

Still-fishing at night is fine sport and certainly is not being monopolized by men, according to A. A. Allegar, special warden of Berwick. While patrolling Fishing Creek recently, Allegar and his companion Foster MacNeal, deputy game protector, met Mrs. Martin, 65 years old, of Berwick. It was then 2 A.M. and Mrs. Martin had had fair luck in the Cinder Tip pool above Light Street. When the wardens talked to her she displayed a large snapping turtle and several good size fish.

Some Bullhead!

Here's a top-notch of a bullhead catfish fishing incident that should hold real appeal for all anglers who derive a kick out of fishing for catfish. And while Floyd Waters of Jermyn who reports the happening does not mention names in connection with it, he assures us that it can be verified without difficulty.

It seems that three Jermyn anglers while fishing for bullheads one night recently went to sleep in the boat. Each man had one rod, baited with worms out on the same side of the boat. When they awoke at about 2 A.M. and started to take up their poles, it was discovered that one bullhead had taken the three baits, each hook from a separate pole being embedded in the mouth of the fish.

GOOD BASS CATCHES ON ALLEGHENY RIVER

Splendid catches of bass have been made this season on the Allegheny River and both branches of the Brokenstraw Creek in Warren county, writes Warden R. C. Bailey of Youngsville. While patrolling the river near Kinzua recently he met three fishermen, one with nine bass, the other two with eight bass apiece. He expressed the belief that more bass are being taken this year than last, which was regarded as a banner season.

"The nicest catch I have seen for some time," he writes, "was made by Joe Richardson of Sisterville, W. Va. Mr. Richardson made his catch near Magee in the Allegheny. He started fishing at 4:30 in the afternoon and when I contacted him he had nine bass that weighed 17 pounds, and the six largest weighed 14½ pounds. He was using soft shell crabs (crayfish) for bait. He spends his vacation here and declares that we have the best bass fishing this year that he has ever experienced."

CANNIBAL BROOKIE

A fine 14-inch brook trout was caught by C. D. Campbell of Media, R. D. 2, while he was fishing Lyman Run in Potter county. Observing a bulge in the fish, Campbell proceeded to perform an autopsy on it.

When opened, he found that the big brook trout contained an eight-inch brookie that apparently had been swallowed only a short time before.

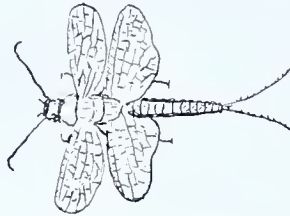
Native Trout Flies

By Chas. M. Wetzel

EDITOR'S NOTE: This is the second of a series of three articles by Mr. Wetzel relative to trout flies on Pennsylvania waters. The ANGLER is privileged to present these splendid descriptive accounts of insect life, written and illustrated by a veteran fisherman and keen student of nature, to its readers.



LARVA



IMAGO (WINGS SPREAD)



IMAGO (WINGS FOLDED)

SKETCHES BY THE AUTHOR

STONE FLIES.

Stone Flies

THE stone flies belong to the family of Plecoptera or Perlidae. In streams, and especially clear streams, which wind around the mountains and over stony beds, the larva of the stone flies are plentiful during early summer. Lift any good sized stone, as large as the hand or larger, and it is likely that two or three dark objects, resembling small shrimp, will run along it to seek the side which is turned away from the light.

On Weiker Run, which I frequently fish, two species of aquatic larva occur side by side under such stones. One is that of the drake, or May fly, the other that of the stone fly. The two species seem to get along rather well together, and are distinguished by their size and stylets or tails. The nymph, or larva of the Drake is smaller than that of the stone fly, and has usually three tails; the stone fly is somewhat larger (about an inch in length) and has only two stylets.

The stone fly larva spends its life (probably a year) under stones or other debris which is continually being washed by fresh water; the riffles in streams are ideal places for its development. They are both herbivorous and carnivorous and are extremely active. Around the first of May or earlier when ready to change into flies, they seek the edge of the stream and fasten themselves by a glue-like substance to the under side of rocks, just at the water's edge and there the creeper skin splits open, permitting the imago, or perfect fly to escape. The stones which border the streams are now strewn with larva skins, curiously like living larva in shape, but dry and empty and with a gaping slit along the back of the thorax where the imago escaped.

The newly emerged fly is still soft and pale colored, but in a short time the organs of locomotion become firm, and the insect takes to the air. It is rather heavy in its flight and shows little power of escaping

when one is trying to capture it. It has two pairs of wings which are longer than the body, and are coarsely netted with cross veins. When at rest, the hind wings are folded lengthwise on the back and are, when unfolded, wider than the fore wings. The antenna or feelers are long and there are two stylets at the tip of the abdomen.

The males and females mate on the ground near the place of emergence. The fertilized eggs, which are black and oval, project from the end of the abdomen of the female, being loosely held together by a transparent skin or egg sac. The female may sometimes be observed clinging to the underside of bridges, where they drop their eggs into the water, and from these eggs are hatched the larva or nymphs.

Among the most common of the stone fly group, will be found the Yellow Sally, Willow and the Stone Fly. The stone fly is the largest of this class and is more or less nocturnal in habits; but all the other flies are seen in the daytime.

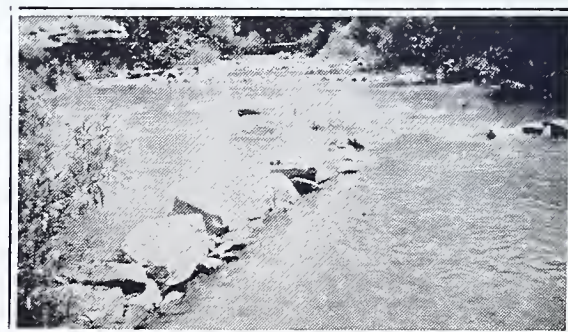
Especially large hatches of the Yellow Sally appear on Fishing Creek above Mill Hall during the latter part of May, and though the trout seem to take the fly well, my luck has been more or less indifferent. Yet some anglers are loud in singing its praises. And so it goes! The willow appears on the water late in the season, and I have had fair success with it during July. The Stone fly is an exceedingly popular pattern along Kettle Creek and its feeders, especially at twilight or after night fall, fishing the fly wet. One instance in particular stands out very vividly in my memory.

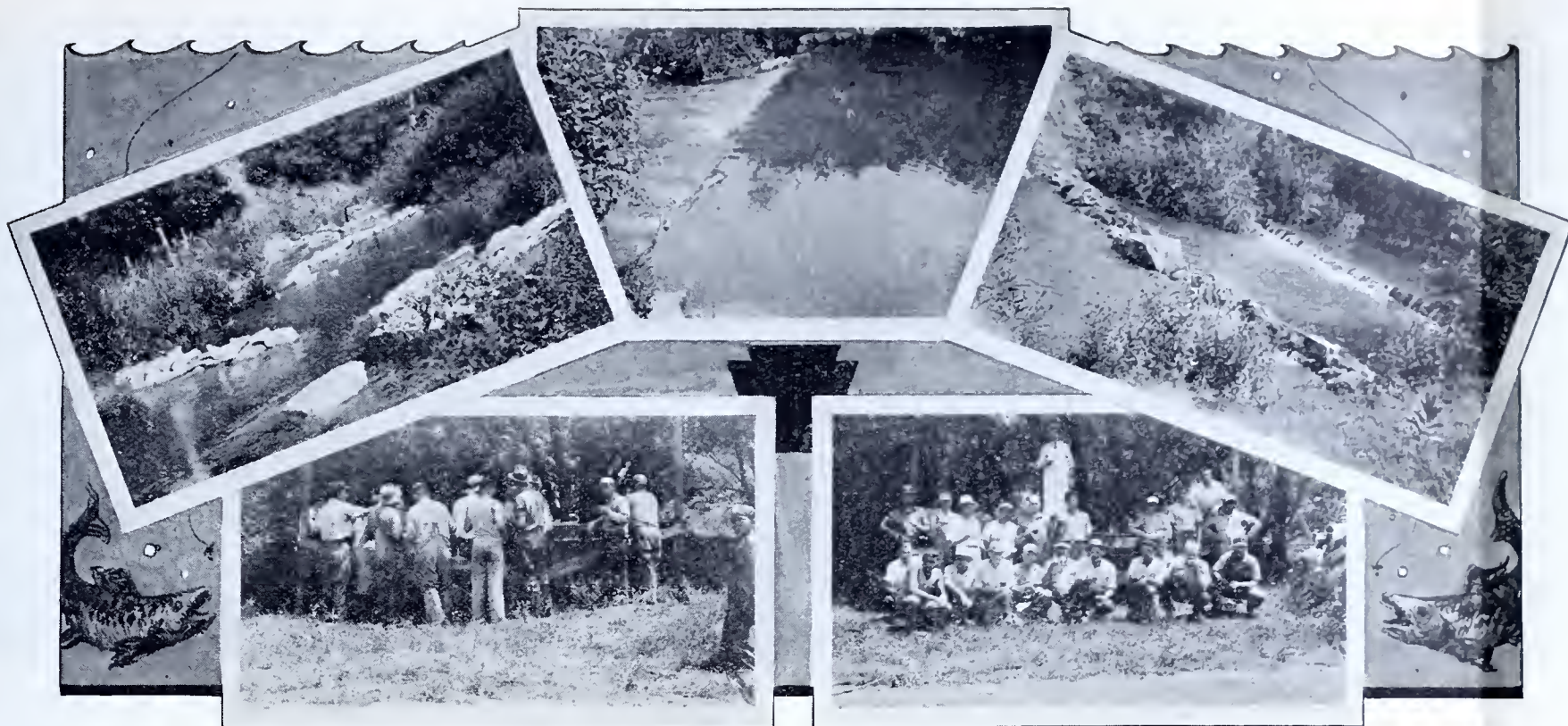
It was late in May, during a long hot spell. I had fished the Kettle Creek from Cross Forks down to the Hammersley, and had only a few feeble rises. Either the trout were affected by the torpor or had already deserted the large stream for the cold, swift water branches. Deciding that the latter theory was the most promising, I continued up the Hammersley to where the creek forked.

It was late afternoon when I reached the forks, and a cool wind swung toward the south with gusts of rapidly increasing turbulence, an unimaginable delight after the oppressive heat of mid-day. Dark threatening clouds, low down, raced along, obscured the sun, and spread with wonderful swiftness over the whole sky. Here and there jagged flashes of lightning illuminated the heavens, followed by the dull rumble of thunder, which reverberated and came echoing back from the mountains. The long pool below the confluence of the feeders—which a few minutes earlier had shone and sparkled so brightly in the sun—now lay clothed in the deepest shadows.

Suddenly the trout started rising! Then buffeted by the wind out of their usually straight course, a hatch of stone flies flew heavily over the water as the storm let loose its fury. Huge raindrops, striking the water, ruffled its surface and made it impossible to place the rising fish, except when some particularly adventurous trout, exposed his gleaming sides above the water in a wild leap. Hastily I tied three wet flies, imitating the stone, on the leader.

The following half hour, replete with thrills, are among my most treasured stream memories. Twelve large brook trout, among them two doubles, fell victims to the stone fly in one of the worst storms I had ever experienced! The stone is a wonderful fly when conditions are right; but then a lot of others are, too.





THE LIVE-WIRE SPORTSMEN OF WILLIAMSBURG, BLAIR COUNTY, ARE STAUNCH ADVOCATES OF STREAM IMPROVEMENT. SHOWN ABOVE ARE THE MEN WHO INSTALLED IMPROVEMENT DEVICES IN BIG PINEY CREEK AND SOME OF THE DAMS AND DEFLECTORS THEY CONSTRUCTED

STREAM IMPROVEMENT "ACCORDING TO TYPE"

It is an accepted physical fact that a remedy for one individual may prove of little or no value to another. Perhaps, if streams are regarded in the light of individuals, the stream improvement "according to type" plan will be more readily accepted. In brief, since Pennsylvania trout streams are not identical in type, improvement methods must vary. While the seven stream types given in this article do not, in any sense of the word, cover the entire range of conditions on our trout waters, they may serve as a general chart in improvement work.

In the first group are uniformly shallow streams and streams of uniform depth. Current deflectors answer the needs of a shallow stream and are highly effective if properly installed. Boulder and log wing deflectors such as those built at Spring Creek should be constructed with the idea of speeding up the current and restricting the width of the channel. By putting the current to work in this manner, ideal natural pools for trout are formed. In few instances should log or boulder dams be constructed on such streams, for care must be exerted not to warm the current to detriment of trout in lower waters. Streams of uniform depth, with sufficient pools may be greatly improved by installing shelters or brush and logs.

Type two streams include those that may become dangerously warm during summer months and streams of very cold temperature (below 60° Fahrenheit) in summer. The second group in this classification is rare in Pennsylvania. To improve waters that become dangerously warm, install deflectors, with the idea of deflecting the current to shaded shores. Shade on such waters is of vital importance. It may be increased by planting willows and brush on the shores, weighting down available brush so that it will grow over the water, and by decreasing

exposure and introducing additional shade on spring tributaries. Building of dams on waters that become so warm during summer is a dangerous practice. If channels of spring feeders are clogged with muck they should be cleaned out.

Under classification three are streams that are either deficient in small trout or over-supplied with them. In streams having few small trout, deflectors should be installed with the thought of accelerating the current to expose additional beds of gravel that may serve as spawning areas. All tributaries should be opened to provide additional spawning areas, and log and brush shelters should be introduced as additional cover for young trout. The food supply and more suitable waters for large trout may be supplemented by introduction of current deflectors.

In classification four are streams subject to fluctuation in flow. On such waters, small dams may be effective in forming pools to serve as additional cover and forage areas for trout. Streams choked with sand or muck come under classification five. They may be improved by introducing current deflectors to form a fast, narrow channel. Covers also may be effectively used in improving this type of stream.

Brush and log covers, and current deflectors to increase areas of rich muck on the bottom where insects may breed, are methods for improving type six streams, deficient in food for trout. Streams that come under classification seven are those that are too heavily fished in the most accessible sections. Current deflectors and other shelter for trout may be introduced to the poorer fishing sections on such streams to good advantage.

The food factor is vital in all improvement work. This is simply another way of saying that trout production on any stream is in direct proportion with the amount of food contained therein. Trout forage may be in-

creased by introducing aquatic vegetation in conjunction with improvement work. This aquatic growth constitutes rich production areas for aquatic organisms, and sometimes is self-established following installation of dams, deflectors and covers on our streams.

Trout forage is classified under three major heads—aquatic, that living its entire life cycle in the water; semi-aquatic, living its life cycle partly in the water; and terrestrial, with a life cycle entirely on land. The aquatic group is highly essential, because this type of food is a stable supply, available at all seasons of the year for trout. Examples in this classification are cold water species of minnows, crayfish, and smaller aquatic organisms, such as the scud or freshwater shrimp. It is obvious that the introduction of more vegetation and creation of better living conditions for trout will automatically tend to increase this type of food through affording it more protection and better breeding areas.

Under classification two, semi-aquatic, may be grouped insects that deposit their eggs in the water. An example of this group is the caddis fly. Insect hatches are, of course, seasonal, and dependent upon water temperatures. The terrestrial group comprises insect and small animal life that may fall accidentally into the water. Grasshoppers, crickets, and (in the case of exceptionally large trout) young mice are types of this class of forage.

Stream improvement has an important bearing on all three groups. Beds of silt, slack water areas, and increased shelter on the stream bed provide suitable conditions for growth of aquatic vegetation. Dams and deflectors, plus stream bed shelter, aid this growth. Improved areas encourage insect hatches. Shelter on the stream banks, increased growth of brush, trees and other

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PANORAMIC VIEW

REVIEW OF THE TROUT SEASON AT SPRING CREEK

By **Oliver M. Deibler**
Commissioner of Fisheries

WHEN our experimental project on Spring Creek, Centre County, was first thought of, our primary object was to secure a section of a suitable stream where a model stream improvement project could be installed that would serve as a laboratory, or example, for similar projects throughout the State.

It so happened that when the Spring Creek site was offered, very much to our surprise and entire satisfaction, we found another source of water supply that has few equals in the entire State. This was in the form of what was known as Forked Springs, with a measured capacity of 3,200 gallons per minute.

After the property was acquired we saw many new possibilities open up before us that had not been considered when the stream improvement project first suggested itself. Among the possibilities that we saw was that we could here build one of the finest trout farms in America, and with comparatively little expense. It also developed that after the stream improvement had been completed, that we had a most excellent opportunity to demonstrate what we have long believed to be the proper angle on fishing; namely, that the real sport in fishing was not the killing of fish, but the environment out on the stream, and the actual catching of the fish.

With these new features in mind we set to work. The first shovel of earth was turned on May 15, 1933. Work on the stream improvement development, and on the trout farm proposition, were begun at the same time, with the result that we were able to open the project to the general fishing public on May 25, 1934. On the opening day we

had then over 600,000 brook, brown and rainbow trout, growing on the project, aside from 97,000 legal size fish that had been developed by the fall of 1933, and planted in the public waters.

Further development of the trout rearing area has been carried on until up to the present time the value of the trout now in the pools, together with those planted last fall, would be greater than the total cost of the whole project, and would represent a clear net profit the second year. We feel confident that by the end of 1935 this trout farm will have a capacity of three-fourths of a million legal trout, and its geographical location is most ideal, since it is located in almost the exact geographic center of the State, with an excellent system of concrete highways leading out in every direction, which will greatly facilitate our stocking in every section of the State.

That these waters are ideal for rapid and heavy growth of our trout has been very definitely demonstrated by the fact that we were able to produce all three varieties of trout this year, a foot and over in length, that were slightly less than 18 months old.

Spring Creek has been classed by outstanding authorities on trout and trout streams as being richer in crustacea, and aquatic organisms, which induce rapid growth in trout, than possibly any other stream in Pennsylvania, or in the entire East.

Another reason for this rapid growth and development of our fish is that this water comes from a series of very deep seated springs, with a low temperature in summer and a very high temperature in the winter time, so that our trout feed quite as well in

January as they do in June, which is not the case in most trout farms.

The stream improvement project was visited by thousands of fishermen and conservationists during the summer, with the result that many of the ideas incorporated here have been carried back to the local communities, and the sight of many improvement devices on our streams in other sections of the State, gives evidence that the sportsmen are at last appreciating what can and should be done with practically all of our streams throughout the State.

The Board of Fish Commissioners has long contended that it is impossible for us to supply good trout fishing under the present condition of our streams, especially in these drought periods, when the carrying capacity of our streams is extremely low, no matter how many fish we raise and plant. A stream is much like a chain, no stronger than its weakest link. In other words, we must adopt the slogan as the Department of Agriculture did some years ago, when it was common to hear advocated that we must make two blades of grass grow where only one grew before. The same thing holds good on our trout streams; that we must make two, or possibly four, trout grow and live, where only one has been able to live before.

Too many of our fishermen friends believe that water is all that is necessary to maintain fish life. This, indeed, is a wrong impression, as water to fish is the same medium as the air is to us, but aside from the air that it is necessary for us to have and breathe, we must have food and shelter, and the same thing applies to fish. The matter of food and shelter to fish is of just as much importance as it is to man.



OF SPRING CREEK

Every trout fisherman is familiar with the fact that there are miles and miles of our streams in Pennsylvania that are completely barren of fish, simply because there is no shelter, sufficient food and pools to attract them and hold them. Places of this kind can be corrected and made into the most desirable fishing areas on the stream, as has been so clearly demonstrated at Spring Creek this year, during the extremely low water period. Great stretches of what had been practically barren riffles the year before, afforded some of the most excellent fishing on the whole project.

The third objective, which in many ways is the most important and far reaching, was the fishing project. This area was stocked very heavily with trout, all ten inches and over, of the three varieties, brook, brown and rainbow, and then opened to the public under restricted regulations, that we felt would clearly demonstrate the thought we had in mind; that men could have real pleasure and enjoyment without actually killing a lot of fish.

One of the regulatory measures provided that any one holding a Pennsylvania fishing license could fish this area five days during the fishing season. Our object in limiting it to five days was to afford equal opportunity for those who live greater distances from the project, than those who live nearby, and might without any restrictions, monopolize the fishing.

We also restricted the fishing to all artificial lures; no bait of any kind was allowed, as we believe it is not good judgment to go into the stream and rob it of the food that makes fish life possible, and then use this same fish food with which to catch the fish. All lures were limited to barbless hooks, or the regular hook with the barb pressed down.

On opening day there were several thousand visitors, and 415 registered fishermen, who were treated to an actual demonstration by some of the greatest fly fishermen in the country; such men as Edward R. Hewitt, who is an outstanding authority on trout and trout streams, and bears the reputation of being one of the greatest fishermen in the world. Also Arthur Neu, who held the Na-

tional Dry Fly Championship for a number of years, and who also is an expert at fooling the trout. Charles Ward, President of the National Scientific Anglers' Club of America, also was present, and gave some very instructive advice, and demonstrated to many of the fishermen that they could derive as much sport out of scientific casting, as those who prefer the rifle and the shot gun to the rod. Many other notables were present to demonstrate the art of fly making, and casting. Among others was Joe Messenger, of Morgantown, West Virginia, inventor of some of the "fooliest" lures on the market.

It is our opinion that after witnessing these exhibitions of casting, and later tried out on this stream with success, that we now have in Pennsylvania several thousand more fly fishermen than we had before the opening of this project. This in itself is quite worthwhile for all the effort spent.

The other restriction was that each fisherman was allowed to catch the legal daily limit of 20 trout, but was permitted to kill and take away only two trout each day, ten inches or longer, the balance to be carefully replaced in the stream. A very accurate record was kept of each day's activities, as all fishermen were registered in, and also registered out, at which time every fish was weighed and measured, and also a record taken of the number that had been caught and replaced.

The results obtained through these records are among the most gratifying of the whole project, as our figures show that there were only 2,472 trout killed and taken off the property, while there were 8,907 that were caught and replaced in the stream. Of these almost nine thousand trout that had been caught and returned, less than 100 died from the effects, as a very careful record of all dead fish that were found on the property was kept. Many sportsmen enjoyed the sport of catching them so much that they preferred returning them all rather than kill any, as there were four times as many returned to the waters as were actually killed.

As the result of the special section that was set aside for the ladies only, we believe that we have a new crop of fishing enthusi-

asts that will have very wide reaching results, as many a poor fisherman has had to devise many cunning schemes and stories, in order to get away on one of his favorite fishing trips, but with My Lady now having the "bug," it will be infinitely more easy for many a poor man to get away on a fishing trip, and without being compelled to manufacture the usual number of excuses.

During the season, from May 25th to July 31st, there was a total of 4,808 day fishermen on the project. Of this number there were 106 who came back and took advantage of the five days afforded them. We also were honored with 34 non-residents as follows:

Michigan	One
California	One
Illinois	One
New Jersey	One
Indiana	One
Maryland	Three
West Virginia	Three
New York	Four
Washington, D. C.	Five
Ohio	Fourteen

Ten States, the District of Columbia, and 66 of the 67 counties of Pennsylvania, had representatives on the property during the fishing season.

The Board, after reviewing the results and information obtained, and summing them all up, have arrived at the following conclusions:

First, that the plan and objectives have been generally approved by the sportsmen.

Second, that stream improvement and stream farming are genuinely practical and profitable.

Third, that it is desirable to provide fishing where the inexperienced fisherman can realize some sport for his money, as well as the expert.

Fourth, that trout fishing in our larger streams can be greatly improved and maintained throughout the season by the proper method of stocking.

Fifth, and most important, that a greater majority of the fishermen greatly prefer a few days of good fishing, rather than a long season of very poor fishing.

STREAM IMPROVEMENT

(Continued from page 7)

vegetation, furnish suitable living conditions for the terrestrial form of trout forage.

A form of deflector that has been tried successfully at Spring Creek, the V-deflector, is built on the principle of creating a strong, swift channel at mid-stream, affording good conditions for aquatic vegetation growth in slack water below the deflector. It is suitable for straight stretches of water, and is constructed with the deflector wings, based in each shore and quartered downstream. Two logs in each wing, firmly wired together and staked, are based with rocks on the upstream sides. If greater height is desired, other logs may be firmly fastened to the base structure, until the deflector is flush with or slightly below the summer water level of the stream. This deflector, the boulder and log wing deflectors, and dams create areas of still water below their tips that are often ideal for growth of vegetation.

Water-cress, common to many of our Pennsylvania streams in limestone sections, may be induced to grow in such areas. Clumps of water-cress tossed into the water lodge in suitable locations with subsequent growth. Other types of trout stream vegetation that may be mentioned are several species of water buttercups and Callitriche or water starwort.

This aquatic vegetation is a worthwhile consideration in stream improvement. Weed beds in our trout streams, plus dams, deflectors, and increased shelter constitute a forward step to better fishing.

THOUSANDS AT PICNIC OF LYCOMING SPORTSMEN

"Bigger and better than ever," was the general opinion of sportsmen who attended the annual picnic of the Consolidated Sportsmen's Association of Lycoming County at Shore Acres on the Loyalsock Creek on August 1st. Fishermen and hunters from Lycoming and neighboring counties were present at the event, and 622 new members were enrolled in the Association, which comprises one of the most active sportsmen's organizations in Pennsylvania.

Many of the anglers present competed in the bait casting events for distance and accuracy and in the fly casting events for distance and accuracy. Bait casting was under the supervision of Carl Bidelsbacher, while J. Aug Beck was in charge of fly casting. Other events scheduled were trap shooting, large bore rifle shooting, .22 calibre rifle shooting, pistol shooting, archery, quoits and shooting at a running deer target, a new event for the deer hunters.

A "Mystery" Trout

It's up to you to solve this one. Myron Shoemaker of Laceyville, writes that Bruce Pickett, Jr., and Fay Rifenbury, Laceyville, while fishing for catfish in Tuscarora Lake or Keeney Pond, Susquehanna County, caught a brook trout, 15½ inches in length, weighing one and one-half pounds. The lake, by the way, and this is the "mystery" part of it, has no inlet and is fed by springs. It has never been known to be stocked with brook trout.



PINE CREEK BROWN TROUT, 14 TO 22 INCHES, CAUGHT BY B. J. NORTHRUP, OF ASAPH

Congratulations

Dedication of the Game Commission's new game farm on the Loyalsock Creek in Lycoming County, in August, was one of the outstanding conservation events of the year in Pennsylvania. Completion of this splendid new farm for the raising of game is a real forward step in the aggressive drive of the Game Commission to better Keystone State hunting conditions. Thousands of ardent sportsmen from many sections of the state attended the annual picnic of the Consolidated Sportsmen of Lycoming County, of which the dedication was a feature.

A fine account of the opening of the game farm appears in the August issue of *Pennsylvania Game News*, official publication of the Board of Game Commissioners, which is so ably covering news of game and hunting for Pennsylvania sportsmen.

The Game Commission is to be highly commended for its latest achievement, the Loyalsock Game Farm, in keeping Pennsylvania at the peak as the greatest hunting state in the Union.

BASS FEED HEAVILY DURING FALL MONTHS

After the first heavy frosts the bass fisherman who knows his fish can generally be found on the bass waters as he realizes that large bass strike more readily at the approach of cold weather. As the extreme cold weather sets in bass go into a state of hibernation or semi-dormant period consuming little if any food. Nature has endowed them with this abnormal appetite, at the approach of the winter months, so that they can build up a reserve supply of energy sufficient to carry them through the dormant

state as well as to regenerate the next season's egg supply.

Those in charge of the brood bass at the state hatcheries make it a point, in the early fall, to give the parent fish all the food that they can consume, knowing from experience that if the brood stock go into hibernation in a poor physical condition during this period the body activities will be kept up at a sacrifice of the internal egg development with the result that the following season many of the parents will be barren or the offspring will lack vitality.

KILL WATERDOGS AND WATERSNAKES

The Freeport Sportsmen, under the direction of their president, Mr. Loyd, conducted an intensive drive against the watersnakes and waterdogs in Buffalo Creek, Armstrong county. Acting under a special gigging permit and accompanied by Fish Warden J. H. Simmons of Rochester, they staged two highly effective forays against these destroyers of fish life.

The first night's kill consisted of 137 salamanders or waterdogs and 50 watersnakes, while on the second night 100 waterdogs and 25 watersnakes were destroyed.

He Has a "Way with Watersnakes"

C. Joel Young, Lehigh County fish warden, does not claim to qualify as a snake charmer, but he sure does have "his way with reptiles," as a recent experience at Monroe Lake, Monroe County, proves. The story, properly substantiated by eye witnesses, begins with Warden Young casting flies in this body of water for bluegills and luck not being what it should have been, our hero began looking for excitement which he some time later found in a huge watersnake playfully disporting around an attractive red fly every time Warden Joe made a cast. This game of tag kept up for fifteen or twenty minutes and, according to Warden Young, everybody was having a good time until he, by accident, hooked his youthful playmate in the back of the head. Angered by what the snake probably thought was foul play, the reptile slashed around that lake like nobody's business. Its boy friend in the meantime made desperate efforts to loosen the grip of the hook, all the while doing his best to explain that the tragic denouement was a sad mishap. By and by, the snake, so witnesses say, began to show signs of exhaustion, was hauled ashore and actually begged to be put out of its misery. Helpless to extend relief, Warden Young finally (and with tears in his eyes, it is said) dispatched the creature that only a few minutes before had been his playmate. It measured 4 feet, 8 and one-half inches, but George Zimmerman, secretary of the Lehigh County Fish and Game Protective Association, who is partly responsible for this sad tale, says it was really three-fourth of an inch over the 4 feet, 8.

IMPROVEMENT WORK ON FISHING CREEK

The West Branch of Fishing Creek, one of the favorite trout waters for Luzerne and Columbia County anglers, is now included in the stream improvement program.

Under the supervision of Fish Warden Russel J. Womelsdorf, a crew of ten men and a foreman from the Elk Grove C. C. Camp No. 104, are putting in four months building dams and retards and anchoring trees and brush.

The project, the first of several planned for this section of the State, was started on June 4th. On June 18th, after two work weeks of five days each, the crew had built ten dams covering about a mile of the stream between Painter Run and Shingle Mill Run and had created numerous brush and tree shelters.

Fishing Creek is stocked with brown trout in its lower waters and with brook trout in its East and West branches. The stream also affords an occasional rainbow. They all crave shelter such as is provided by sunken trees and brush and the project is providing it for them. This part of the work, it is believed, will accomplish a great deal in protecting the fish from their natural enemies.

To avoid possible future criticism of the project, every effort is being made to build the dams so that they cannot be washed out by even the heaviest freshet. The mountain stream makes an appreciable drop from source to junction with the East Branch of Fishing Creek and therefore the dams are being built solidly. It is the consensus of opinion among anglers who have inspected the completed jobs that they will have a life of 25 years or more.

In building the first dam a heavy cribbing was securely anchored and filled in with rock and gravel. On the top, heavy poles, ranging from 12 to 20 feet in length, were spiked fast to the cribbing logs and the upstream ends were buried deeply in the bed of the stream.

In building the second dam a trench was excavated on both banks and a large log was anchored securely at both ends. A fill of rocks and gravel was made on the upstream side and poles were spiked fast to the log and the upstream ends buried deeply in the bed of the stream.

Womelsdorf then found that the second dam was just as practical as the first, and could be constructed in much less time and required less material. As a result dams similar to the second type have been built since then.

These dams present a solid triangular mass of wood and rock, and it is believed in a flood, ice, rocks or trees will slide over the top, doing little or no damage.

In nearly all cases, a stone dam is constructed downstream from the other dam, forming a second pool. Such a pool will be the delight of the bait fisherman. The fly fisherman will not need to confine his activities to either pool, but can fish both. The stone dams are built in a jiffy through the use of a truck which backs up to the stream, dumps its load of rocks and goes off for another load while members of the crew get the first load in shape. On its return trips, the truck backs out into the stream and dumps its cargo into position.

Not all of this work will be confined to the West Branch. Dams will be built and brush anchored in its tributaries, making them excellent breeder streams. When this work is finished, the crew will improve the East Branch and its tributaries. All of these waters are on land owned by the Game Commission.

Struck Once Too Often

When Raymond Minich, of Camp Hill, returned from a trout fishing trip to Cedar Run, Cumberland County, during the waning days of the 1934 season, he brought in addition to a big brown trout a report of one of the most unusual catches of the year.

Using a large chub for bait, Minich tried one of the deep pools in Cedar Run, just where the stream had cut a hole under the bank. The brownie struck the chub, was hooked, and when the Camp Hill angler tried to lift it from the water, straightened out the hook and broke through the landing net being wielded by Paul Stetler of Camp Hill.

Twenty minutes after he had lost the big fish, Minich returned to the pool, was rewarded by another strike on a chub and this time succeeded in landing the brownie. It weighed 3 pounds, 10 ounces and was 21 inches in length. The unusual part of the incident is that the trout after having been so securely hooked on the first occasion, should strike again after a lapse of only 20 minutes.

HERE'S ONE FROM THE NORTH BRANCH

George McCabe, who lives on the North Branch of the Susquehanna River at Towanda, is known to many anglers who try this famous bass stream. Just recently, according to Division Game Supervisor Frank Myers, George made an unusual catch while fishing for bass with a stone catfish as bait. Believe it or not, he caught a 30 pound carp. At the time, he was fishing from a boat in deep water, and it is understood that the big carp furnished quite a battle before it was taken.

Frank reported catching a lot of fine bass and wall-eyed pike while vacationing on the Branch.

BASS HITTING AT TWIN LAKES

Word has been received from Frank V. Stutsman of Twin Lakes, Pike County, that bass fishing has improved in that section recently. He writes:

"Bass fishing is on the up just now. It was none too good earlier, i. e. during the month of July, though a few nice catches were made then. Warden Frank Brink reports that four fishermen he interviewed had taken 32 bass on the opening day of the season. Day before yesterday, August 8th, three men in a party took out 13 bass. They were fishing fly. The best fish of the lot was a 4½ pound smallmouth bass, 21 inches long. It was caught by J. C. Champion of Carbondale. Other good catches are being made daily, but not many bass over 1½ to 2 pounds."



MRS. ANTHONY LECH, SHENANDOAH, WITH A CATCH OF PICKEREL

WE THANK YOU

We are greatly indebted to Jay Howard who runs the "Rambling at Random" column in the *Independent*, Collegeville, for the following item which appeared in a recent issue of that paper.

"And by the way, everyone who gets a fishing license should also get the *ANGLER*. The same can be said of the *Pennsylvania Game News* and those who get a hunting license. This writer believes the State Fish and Game Commissions would act wisely if they made a subscription to either magazine compulsory, along with the respective license. The educational possibilities of these two magazines, with a 100 per cent. circulation among the sportsmen of the State would be unlimited. They exert a tremendous influence along this direction even now with their present limited circulation."

We hope some day the sportsmen will do just the very thing he suggests. However, we must have the utmost cooperation of our readers to the extent that they will be willing to tell others about the magazine. Everything possible is being done to increase circulation with the limited funds set aside for this purpose and therefore we must count a great deal on our subscribers for additional support.

"UNCLE DAN" SCHNABEL HOOKS SNAKE ON FLY

Hon. Dan R. Schnabel, Johnstown, a member of the Fish Commission, tells of an unusual incident that occurred while he was fly fishing on Breastwork Stream, Bedford County.

On the back cast, "Uncle Dan" said, the fly fell on the ground. The Board member was amazed to find that a watersnake had taken the fly when he attempted to retrieve it. The snake, it is understood, put up quite a battle.

THE BULLFROG

By C. R. Buller

Deputy Commissioner of Fisheries



BECAUSE of the thousands of bullfrog tadpoles sent out each year for distribution, many people are of the opinion that the frogs are confined and reared under strictly artificial conditions, and for this reason, persons desirous of entering into the rearing of frogs, on a commercial scale, call upon us for information as how to proceed. To my knowledge, there are no successful frog farms in operation, where the stock is confined and reared under artificial conditions, as is being done at the fish hatcheries with various species of fish.

The following article was prepared to show the method of obtaining the tadpoles, and to point out some of the factors that would have to be taken into consideration, if frogs and tadpoles were too closely confined.

Our tadpoles are produced in connection with the rearing of certain species of warm water fish. This work is carried on in ponds, ranging in area from one-half to one hundred acres, where a more or less natural condition exists with reference to aquatic plant life, water temperatures, etc., which make ideal places for a limited number of different species of frogs to live and reproduce.

Before entering into discussion of the bullfrog (*Rana catesbiana*), we will first consider to what class of animals a frog belongs, and what transpires in its change from the larva stage to that of the adult.

Frogs, toads, salamanders, and newts are cold-blooded vertebrates, belonging to an animal class called Amphibia, and which if literally translated from the Greek, means a creature of two lives. The typical Amphibia, after hatching from the egg, begins life as a legless, fish-like creature, possess-

ing gills, an eel-like tail and lives wholly within the water. This is the larva stage of the creature. Later on legs make their appearance, the tail disappears, being absorbed into the body, the digestive system changes from a simple to a complex form, lungs take the place of gills, and the creature emerges in the adult form, fitted for a life on land, if it so desires. These stages of development or changes in the life of the creature, are called metamorphosis, and are typical of the frogs found about the hatchery grounds. The larva form of the frog is known as the frog tadpole.

Because the bullfrogs have a free range of the property, living and depositing their eggs in almost any of the ponds to their liking, it follows that other species of frogs besides the bullfrog, are present and must be considered. The three most prevailing species, other than the bullfrog, are the pickerel frog (*Rana pulustris*), the leopard frog (*Rana pipiens*), and the green frog (*Rana clamitans*). I will state briefly, some of their identification marks, natural habitat in Pennsylvania, range in North America, spawning habits, etc.

Pickerel Frog

Identification Marks:—The ground color of the upper parts is brown, with the under parts of the legs and belly an orange yellow. The under parts of the lower jaw are white, sometimes marked with brown. On each side of the back is a low, broad fold of skin (the lateral fold), extending from the eye backward. Between these folds, on the back can be found four, more or less conspicuous folds. Between the lateral folds, also on the back, are two, more or less, opposite rows of dark,

squarish spots and below the lateral folds, on each side, two irregular rows of dark spots, generally somewhat smaller than those found on the back. The legs are barred or irregularly spotted.

Range in North America:—Throughout the eastern part, east of the Great Plains and north to Hudson Bay.

Size:—From 2 to 3 inches in body length, measuring from the tip of the muzzle to the posterior end of the body, probably too small to have much of a commercial value. Another objectionable feature, from a commercial standpoint, would be the secretion of acid substance in the skin.

Natural Habitat in Pennsylvania:—The pickerel frog spends little of its time in the water, but enjoys being nearby, where it can keep its skin moist, seek protection, and deposit its eggs. During extended periods of damp or rainy weather, it wanders considerable distance from the water side, probably in search of caterpillars, butterflies, millers, gnats, beetles, etc., but during dry weather, it is inclined to stay near the water, where it probably feeds upon the type of small life that makes its home about the shore lines.

Spawning Habits:—In Pennsylvania, the eggs of the pickerel frog are deposited in May or June, generally along the shore lines, in shallow water. When deposited, the eggs are in the form of a more or less irregular mass, several inches in diameter. After hatching the tadpole develops into the frog, in July or August of the same year.

Leopard Frog

Identification Marks:—The ground color of the upper parts may be green, gray or brown, which sometimes changes rapidly from one color to the other. The under parts are white or yellowish white. The legs are marked with dark spots or bands. On each side of the back, is a conspicuous, broad, lateral fold, with two or more broken folds of skin extending lengthwise along the back between the lateral folds. Between these folds may be found two irregular rows of dark, round spots and below the folds on each side are two additional rows of irregular, dark spots.

Range in North America:—The leopard frog is probably the most common frog in North America, east of the Sierra Nevada Mountains.

Size:—When fully matured, ranges in size next to the green frog measuring from 3 to 4 inches.

Natural Habitat in Pennsylvania:—The habitat of this species, like that of the pickerel frog is not, as a rule, in the water, but nearby. In damp, wet weather it is often found wandering considerable distance from its aquatic home, which may be any body of water, large or small. Its natural food consists of earthworms, insects, spiders, other frogs, and in fact, almost any kind of life, small enough to be swallowed.

Spawning Habits:—Spawning takes place in April or May. The eggs are usually deposited in shallow water, where they may be attached to sticks, grass, etc., or left free. The tadpole develops into the frog in July or August of the same year.

Green Frog

Identification Marks:—The color of this frog is extremely variable, although the typical color is bright metallic green on the

head and shoulders, and dark olive or brown, posteriorly. The under parts are white with some marbling, the sides of the body may be marked with large, dark blotches. In some instances, the throat of the male is bright orange, while that of the female may be white, spotted with dark. It has two conspicuous ridges or lateral folds, down either side of its back.

Range in North America:—Commonly found throughout the eastern portion, including Canada and Florida.

Natural Habitat in Pennsylvania:—The green frog is quite aquatic spending much of its time in the water. While it is found quite commonly about springs, small ponds, or small creeks, it appears to have quite a liking for large bodies of still water, as lakes, mill ponds, quiet portions of large streams and rivers, where it spends much of its time in the shallow water, along the grassy shore lines, feeding upon insect life, tadpoles, small frogs, and small animal life in general.

Spawning Habits:—The spawning is rather extended, eggs being found from May 1 to July 1 and probably later, depending much upon the weather temperatures. The eggs are deposited in about the same places as those of the bullfrog, but the egg mass is probably more commonly found floating. From the time the egg hatches into the tadpole, it requires one year or more before it develops into the frog.

Bull Frog

Identification Marks:—The upper parts vary in color from green to greenish brown, with shades ranging from light to very dark. The back and sides may be plain in color or may be spotted with dark. These spots when present, may be distinct or connected. The arms and legs also, may be spotted or barred with dark. Its under parts are yellowish white, either plain, or spotted, or mottled with dark. It has no lateral folds or ridges down either side of its back, although a strong fold of skin extends from behind the eye to the arm, curving around the ear. To the uninformed, the green frog and the bullfrog might be easily confused. The bullfrog is easily identified from the former by the absence of the lateral fold.

Range in North America:—East to the Rocky Mountains, including Florida and Texas.

Size:—The largest of the Pennsylvania frogs. The adult specimen often measuring from 6 to 8 inches in body length.

Natural Habitat in Pennsylvania:—The bullfrog is more aquatic than any of the other Pennsylvania frogs. It rarely strays from the water for any distance, unless disturbed by enemies, and prefers large areas, as lakes, ponds, and quiet running streams. It is very voracious, feeding upon almost any life, small enough to be swallowed.

Spawning Habits:—This frog is the last of these four species to spawn. The spawning may take place any time from June 15 to August 1, depending upon the water and air temperatures. The size of the egg mass is comparatively large, oftentimes measuring as much as 5 sq. feet. The eggs are deposited in various places, such as around submerged, or partly submerged

stumps, rocks, aquatic plants, brush, etc. The depth may range from those floating on the surface, to those submerged several feet. The tadpole requires two years or more, before it develops into the true form of a frog.

Frogs at the Hatcheries

The habits of the bullfrog described below, are as we find them in and about the hatchery fish ponds, and I presume their habits in their wild habitat would be much the same as in this climate, because they are not confined but live in a natural state.

In rearing certain species of warm water fish, as the bass, sunfish, catfish and others, we use every means possible to make conditions natural with the result that many of the ponds contain submerged logs, brush, rocks, an abundant growth of aquatic plants, and in many instances a portion of the banks overhanging with such water loving plants as the alders, willows, etc. By creating these conditions we attract various insects and other organisms that live and reproduce in or about the ponds, that would otherwise not be there, thus creating by their presence a supply of natural fish food that cannot be substituted by any artificial foods yet devised. These conditions as well as being beneficial to fish life, make ideal places for the homes and reproduction of the bullfrogs.

The food of the frog consists of almost any kind of animal life found in and about the water, that is small enough to be swallowed, such as earthworms, insects, crayfish, fish, tadpoles, and other frogs, including those of their own kind. In fact, they seem to have an instinct to snap at any small moving object coming within their range. I have said moving object, for the reason that we have not been able to induce a bullfrog to feed upon food that was not in motion.

In our hatchery aquariums we have on exhibition a number of bullfrogs and from observations in the aquariums, I am led to believe, that the live food we have tried to induce them to feed upon dead food, such as chopped meat, dead fish, and cereals, and in every instance they would die of starvation before consuming an object that was not in motion.

Just to what extent in nature they feed upon fish, I do not know. But from observa-

tions in the aquariums, I am led to believe, that the number of fish taken is very small, as they appear to be very awkward fishermen, generally making many attempts before capturing their prey.

How Sex is Distinguished

A sure way of telling the sex, particularly at the approach and during the breeding season, is that the first finger of the hand of the male is greatly enlarged, especially at the base. The swelling appears to be due mainly to the enlargement of the granular portion of the skin in this region. The ear of the male is much larger than that of the female, but one can easily become confused unless there is at hand individuals for comparison.

The female is usually more brown and spotted, and the male more evenly plain green. The male oftentimes has a bright yellow throat, while that of the female is yellowish white, or white mottled with brown. Because the color varies greatly, not only according to sex, but among individuals of the same sex, color markings cannot be relied upon.

Natural Enemies

The enemies of the frog in and about the hatchery grounds are many, consisting in part of crows, herons, hawks, cranes, minks, water rats, snakes and fish, and because of their cannibalistic habits, they are enemies of one another. Disease is also probably a serious enemy, but to just what extent, I have no knowledge.

As frogs are one of the most defenseless of animals, they must depend on certain instincts of self-preservation for their existence, some of which are interesting. Bass are particularly fond of small frogs and tadpoles, although an average sized bass will rarely molest an adult bullfrog.

A number of years ago, the major portion of the Union City Hatchery was devoted to bass culture, with the result that few frogs were to be found in that vicinity. After the bass work was discontinued, and the ponds devoted to such fish as the yellow perch, sunfish, and catfish, adult frogs soon started to make their appearance, and today this hatchery has for distribution more tadpoles than any other of the state hatcheries.

(To Be Continued)



REED-FRINGED SHORES MAKE GOOD FROG AREAS

DAYS ASTREAM

A Section Contributed by Readers of PENNSYLVANIA ANGLER

WHERE PIKE ARE PLENTIFUL

By Fred E. Stone, Harrisburg

Jim and I had journeyed 190 miles to fish this lake and neither of us had ever seen a picture of it. That's the faith we have in our Fish Commission. If they say there are fish in a lake or stream, that's enough for us. But wait! I'll introduce us. Meet Jim—he's a fisherman—part heron, I sometimes believe. He catches trout, bass, or pike. They're all the same to Jim; he gets 'em. And as for me—I just fish.

We arrived early Monday afternoon at Lake Wallenpaupack, which, as the map discloses, is in the northeastern corner of our great State. After obtaining a bite to eat we hired a boat and headed up the shore line to catch a few bass or pickerel before dark. The boat-keeper had advised us to first try trolling with a spinner and night crawler, and, after much discussion, we tried this with but little success. We caught but three small perch and decided to move farther up the lake.

What a difference just a half mile will make! We must have run right smack into a fishes' cafeteria or something. I was handling the rod at the time, repeating some magic words to myself, when "sock!" one had a hold of my spoon. And did I have a fight on my hands until I finally got him into the boat! It was a wall-eyed pike fully 15 inches long. From then on it was every pike for himself, except occasionally, to break the monotony we would catch a rock bass or so. Some of these bass weighed close to a pound and a half.

At dusk we decided to return to the boat-landing. I was fishing and commenting on our good luck and hoping our luck would continue on the morrow when the bottom of the lake (?) got caught and started to swim rapidly away from me with me hanging on for dear life. Well, that pike had 52 miles of lake, which averages 30 feet in depth to act up in, and he did for fully ten minutes. We finally persuaded him by means of the landing net to come aboard and found that we had caught six pounds of the "fightingest" he-pike you ever saw. That was a grand climax for our first trip out and left us with great anticipations for Tuesday morning which dawned foggy and chilly, but the lake was still there. We were told to try plugging in the early morning, which we did for an hour and a half with little luck. We again tried trolling with much the same results as we had the previous afternoon. In about two hours time we had caught and returned between 25 and 30 pike that ranged in size from 10 to 15 inches. About 9 o'clock Jim hooked and landed after much commotion on everyone's part a nice largemouth which scaled just under three pounds. This

was our only black bass in two days fishing and topped our morning's catch.

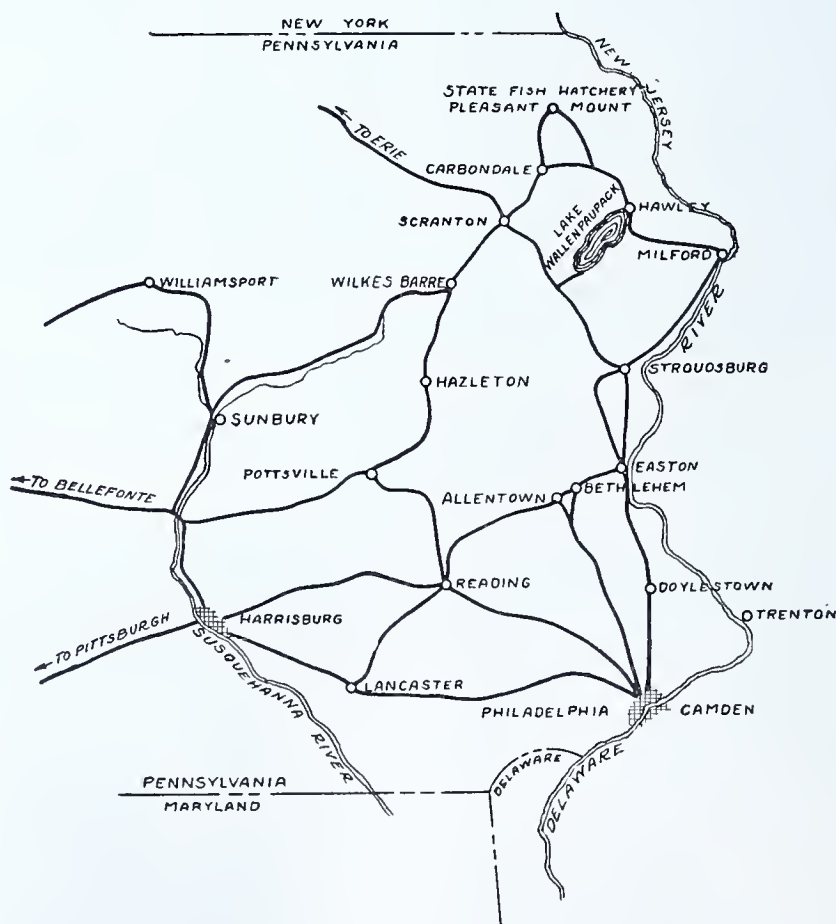
Four o'clock that afternoon found us back again with every bit the same luck until at dusk we moved to a new location. I again landed two, ten minutes apart, which weighed four and a half and five and a quarter pounds. And you should have heard the captain! Or perhaps it's better that you didn't. The only consolation I had to offer was to threaten to row him into a real pappy fish in the morning, as we had to depart at noon the following day and it was now nearly dark.

Wednesday morning we were literally frozen awake. The thermometer registered 42 degrees and if that isn't cold for July, I'm leaving for Panama at once. But the Lake wasn't frozen over, so we started to

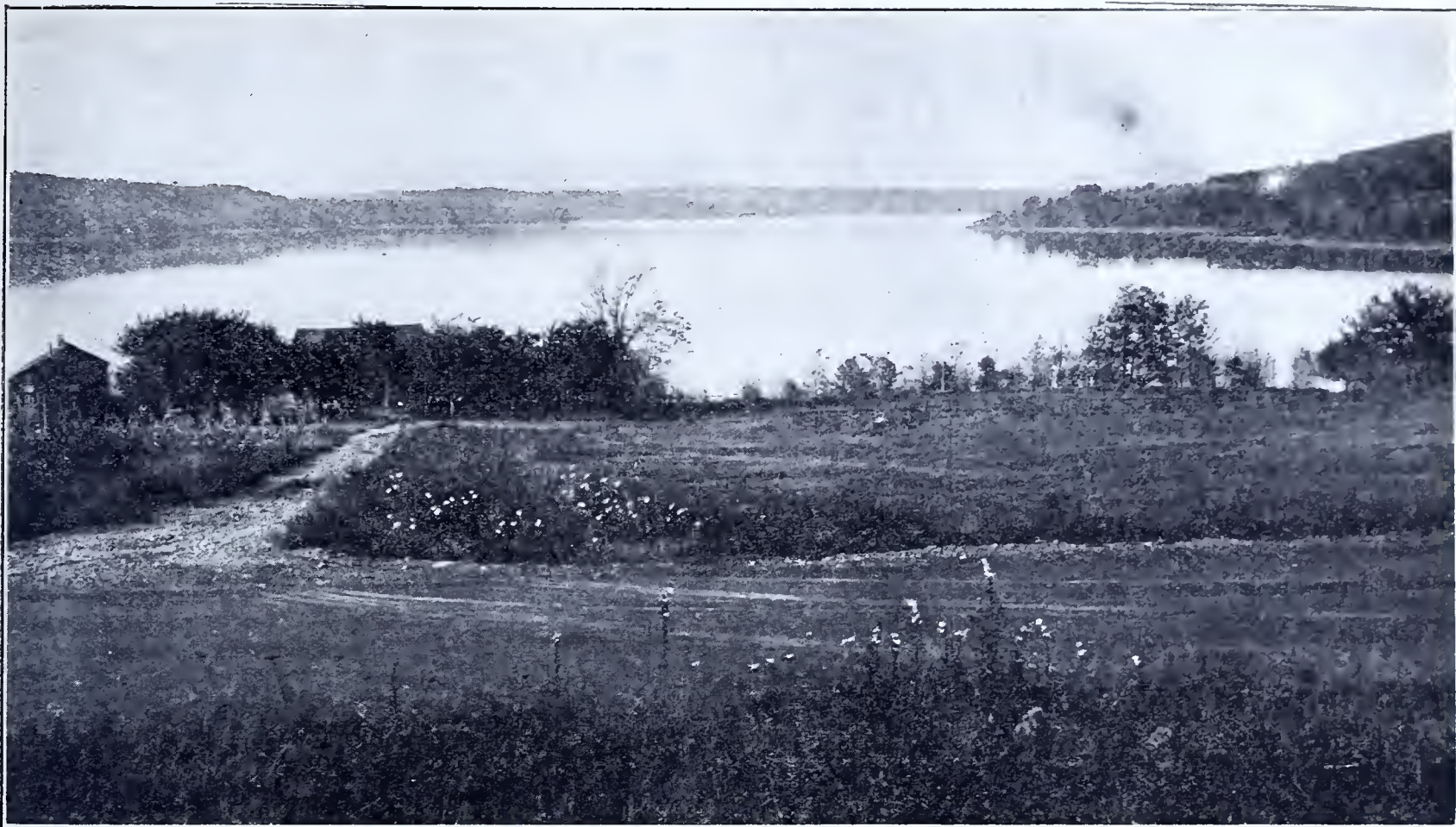
fish at 5 o'clock. We caught fish so easily, I began to believe we were fishing in a hatchery. We continued to return everything very carefully while looking for that old sockadowager for Jim. When the morning was half gone, fate finally smiled and Jim hooked a serapper that put up all the fight one man could ask for. When netted he weighed just a half pound less than the largest fish we had caught the first evening.

After this we decided to do a little exploring just beyond that farthest point for future reference. So we went sightseeing until noon and made promises to each other to surely fish Lake Wallenpaupack this fall when the bass and pickerel are striking.

On our return trip this fall, even though we have no luck and the bass and pickerel refuse to strike, we shall feel amply repaid for our journey by the recollection of pleasant memories when the pike were striking. And as for scenery, a grander view of Pennsylvania cannot be had in any other part of our great state.



AUTOMOBILE ROUTES TO
LAKE WALLENPAUPACK



LAKE WALLENPAUPACK

121,475 Trout Stocked in July

July stocking of streams throughout the state again featured brook and brown trout above legal six-inch size. Included in the stocking were 74,015 brook trout averaging 8 inches in length, 39,680 brown trout from 8 to 12 inches, 400 rainbow trout averaging 12 inches, 7,000 brown trout fingerlings and 400 brook trout fingerlings.

Following are the streams stocked in the various counties

Adams—Little Marsh Creek.
Beaver—Big Traverse Creek.
Bedford—Shermans Valley Run, Yellow Creek, Potter Creek, Three Springs Creek, Deaner Gap Run, Cove Creek and Bobs Creek.
Blair—Vanscoyoc Run, Canoe Creek, Sandy Run, Bells Gap Run, Clover Creek, Big Fill Run, Bald Eagle Creek.
Butler—North Branch Bear Creek, Little Connoquenessing Creek, Bear Creek.
Cambria—Bens Creek, Beaverdam Run, South Fork Little Conemaugh River, Hinkston Run, Clearfield Creek.
Cameron—Portage Creek.
Carbon—Pohopoco Creek.
Centre—Black Bear Run, Cherry Run, Benner Run, Marsh Creek, Laurel Run, Spring Creek.
Chester—Chester Creek, Valley Creek.
Clarion—Mill Creek.
Clearfield—Trout Run, East Branch Mahoning Creek, Bennetts Branch, Moshannon Creek, Mosquito Creek, Bell Run, Montgomery Creek, Little Clearfield Creek, Sugar Camp Run.
Clinton—Big Fishing Creek, West Branch

of Young Woman's Creek, Chatham Run, Hammersley Fork, Rattlesnake Run.

Columbia—Roaring Creek, Fishing Creek.
Crawford—North Branch Woodcock Run, North Branch of Middle Branch Sugar Run.
Dauphin—Stoney Creek, Manada Creek.
Delaware—Ridley Creek.
Elk—Medix Run, Bear Run, Bellmut Run, Trout Run.
Fayette—Dunbar Creek, Buck Run, Big Sandy Run.
Forest—Spring Creek, Hickory Creek.
Franklin—Dennis Creek, Trout Run, Broad Run, Conococheague Creek.
Fulton—Oregon Creek, Little Brush Creek, South Brush Creek, Little Aughwick Creek.
Huntingdon—Blacklog Creek, Shavers Creek, Greenwood Furnace Dam on East Branch Standing Stone Creek, East Branch Standing Stone Creek, Standing Stone Creek.
Indiana—Little Mahoning Creek.
Jefferson—Cathers Run, Little Sandy Creek, Big Run, Coder Run, North Fork Red Bank Creek, South Branch of North Fork Red Bank Creek, Laurel Run.
Juniata—Willow Run, Horse Valley Run, Horning Run, Licking Creek, Big Run, Spanhaver Run, Lost Creek.
Lackawanna—Lehigh River.
Lancaster—Seglog Creek, Middle Creek.
Lawrence—Taylor Run and Big Run.
Lebanon—West Branch Hammer Creek.
Lehigh—Little Lehigh River.
Luzerne—Huntingdon Creek, Wapwallopen Creek, Hunlock Creek.
Lycoming—Slate Run, Nippenoise Creek, Loyalsock Creek, Lycoming Creek.

McKean—Chappell Forks, North Branch Sugar Run, Sugar Run, Kinzua Creek, Potato Creek, Marvin Creek, West Branch Tunenoguent Creek.

Mercer—West Branch Wolf Creek, East Branch Wolf Creek.

Mifflin—Kishacoquillas Creek, Long Meadow Run.

Monroe—Paradise Creek, Brodheads Creek.
Montgomery—Deep Creek.

Northampton—Waltz Creek, Bushkill Creek.

Perry—Liberty Valley Run.

Pike—Wallenpaupack Creek.

Potter—Cross Forks, First Fork Sinnemahoning Creek, Genesee Fork, Little Kettle Creek, East Fork of First Fork of Sinnemahoning Creek, Cushing Creek, Genesee River, Fishing Creek, Pine Creek, Kettle Creek.

Somerset—Pine Run, Elk Lick Run, Beaverdam Run, South Fork Bens Creek, Brush Creek.

Susquehanna—Starrucca Creek.

Tioga—Pine Creek.

Union—Penns Creek, White Deer Creek, Laurel Run, Weikert Run.

Venango—East Sandy Creek, Mill Creek, South Branch Sandy Creek, Cherry Run.

Warren—Caldwell Creek, West Branch Caldwell Creek, Tionesta Creek.

Wayne—Lackawaxen River, Little Equinunk Creek.

Westmorland—Loyalhanna Creek, Roaring Run, Powder Mill Run, Furnace Run, Baldwin Run, Jacobs Creek, Tub Mill Run.



HERE ^{A_ND} THERE IN ANGLERDOM



Sherman's Creek in Perry County has been furnishing good bass fishing this season. Recently Jack Snyder, Landisburg, R. D., caught ten bass during an afternoon's fishing. His catch ranged in size from 11 to 12 inches, according to Warden George James, Carlisle.

Fishing in Tobyhanna Creek one day during the trout season, Corbett Stubbs of Pocono Lake caught 16 brown trout and four brookies in two hours. He was fishing dry fly when he made the catch, which ranged in size from 10 to 12 inches.

Robert Hunsinger of Tamaqua landed a three pound bass in the Hauto dam.

Ray Miller, of Catawissa, made a nice catch of bass and wall-eyed pike in the North Branch of the Susquehanna recently, according to Warden Charles Litwhiler. Six bass measuring from 9½ to 12½ inches and three pike, 17 to 21½ inches, comprised his catch.

Still fishing sometimes yields fine catches of wall-eyed pike or Susquehanna salmon. Joe Bower of Hawley recently demonstrated this fact when he caught 12 wall-eyed pike in Lake Wallenpaupack, ranging in size from 14 to 28 inches. The largest pike weighed 6¾ pounds. He was still-fishing with night crawlers at the time.

Warden Russell Womelsdorf reports that bass fishing on the North Branch has been exceptional again this year. Early in the season, water conditions were perfect and hundreds of anglers realized their bass catching ambitions on opening day.

Henry Ambosi of Nuangola landed a wall-eyed pike, measuring 27 inches, weight 6¾ pounds, in Lake Nuangola, on the opening day. This catch was quite unusual as wall-eyed pike are rarely caught in this lake.

Joseph and Edward Connors, Peter Judge, Thomas Maloney, Frank Turon, Joseph Mortimer, Stanley Leonard and John Donnely all of Pittston, together caught 24 wall-eyed pike, measuring from 13 to 28 inches, the largest one weighing 6 pounds and 3 ounces, in the North Branch on the opening day. Nightcrawlers on spinners were used in trolling to make this catch. They also caught two nice sized smallmouth bass and one large pickerel.



NICK RATAMESS, BERWICK, DISPLAYS HIS 24½-INCH BROWN TROUT TAKEN FROM PINE CREEK, POTTER COUNTY

On the first trout fishing trip he ever made, Jay Weaver caught 20 trout, brown and brook, from the Wapwallopen Creek. His catch ranged in length from eight to 12 inches, writes Warden Russ Womelsdorf.

BIG SPORTSMEN'S MEET SCHEDULED NEAR ERIE

Northwestern Pennsylvania sportsmen from nine counties are looking forward eagerly to the Second Annual Field Meet of the Sportsmen's Council, Division F. Sponsored this year by the Presque Isle Sportsmen's League of Erie, the meet will be held on the Chase Farm, Perry Highway, about two miles south of Erie. Bird dog trials will be held on September 21st, and followed by the big general meet on Saturday, September 22nd. These trials will be for shooting dogs and entirely in the amateur class.

Other events scheduled are fly and bait casting, fox, coon and rabbit dog trials, pistol and rifle matches. An ox roast will be held in connection with the field meet.

John Goliash of Glen Lyon, caught 2 pickerel, measuring 24 inches each, and 4 nice largemouth bass, the largest one measuring 19 inches and weighing 4 pounds, in Fords Lake on the opening day.

Frank and John Kopicki of Kingston, caught 30 pickerel, ranging in size from 13 to 20 inches, in Cooks Pond, Bradford County on the opening day.

Charles Skillans and party of five, of Kingston, caught 34 smallmouth bass, ranging in size from 10 to 14 inches, in the North Branch on the opening day.

Henry Miller, special fish warden of West Pittston, caught a largemouth bass, measuring 20 inches, weight 4 pounds, in Cummings Pond on the opening day.

Alex Bereheski of Exeter, caught the limit of smallmouth bass, ranging in size from 10 to 12 inches, in the North Branch on the opening day.

C. B. Olsen of Parsons, caught 7 brown trout, ranging in size from 13 to 17½ inches, in Tobyhanna Creek on June 2nd.

E. J. Kelley of Pittston, made the following catches of brook and brown trout combined on three successive trips to Bowmans Creek during the season. First trip, 14 trout, ranging from 8 to 15 inches in length. Second trip, 11 trout, ranging from 8 to 14 inches in length. Third trip, 11 trout, ranging from 8 to 17 inches in length.

"William Fritz and Daniel Hartman of Benton," writes Warden Russ Womelsdorf, "are two of the most successful fishermen in taking large brown trout that I know of in this section. They do most of their fishing on good dark nights and state that then is the time to get the big ones on most any live bait. Fishing Creek is their favorite stream. One of their best catches during this season was made on the night of June 29th, when they landed 12 brownies, ranging in size from 11 to 17 inches, in Fishing Creek. The largest one they have taken in recent years was caught by Mr. Hartman, in the month of July, 1933, in Fishing Creek. This large brownie measured 24 inches and weighed 4 pounds and 9 ounces. During the same week he caught another one in the same pool that measured 20 inches."

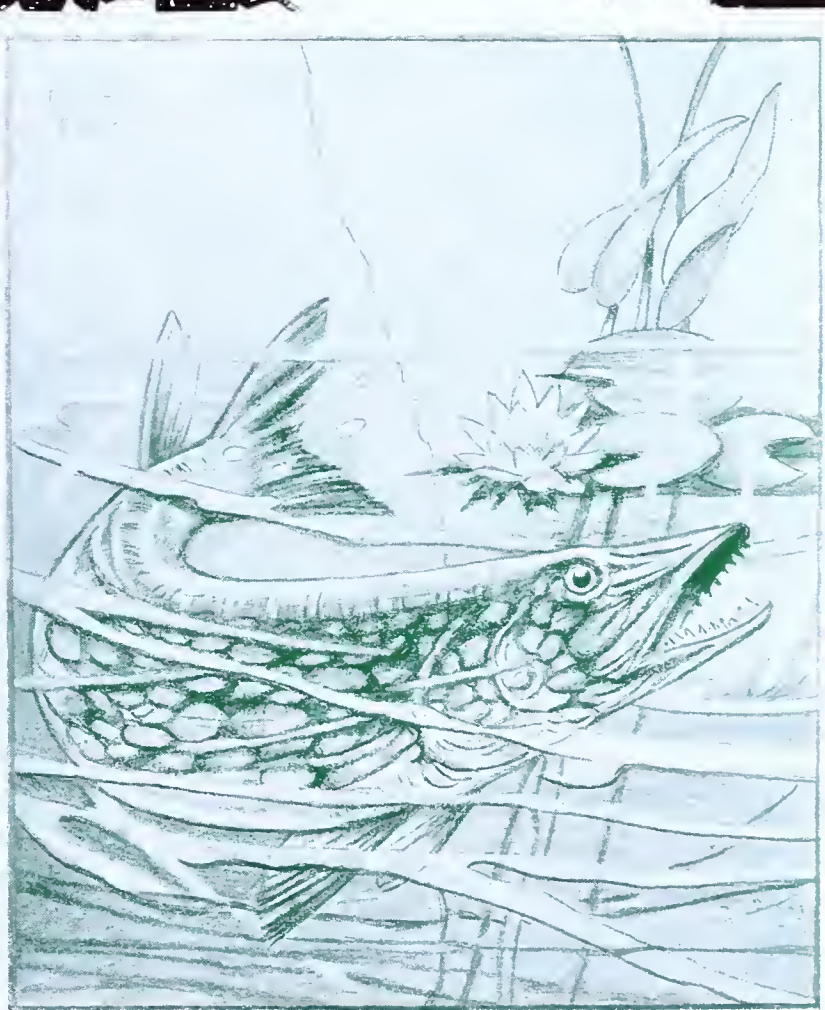


DR. HARRISON A. DUNN, OF ERIE, WITH TWO FINE MUSKIES FROM LAKE
LEBOEUF. HE CAUGHT THEM ON A TROLLING SPOON

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All contributions returned if accompanied by first class postage.

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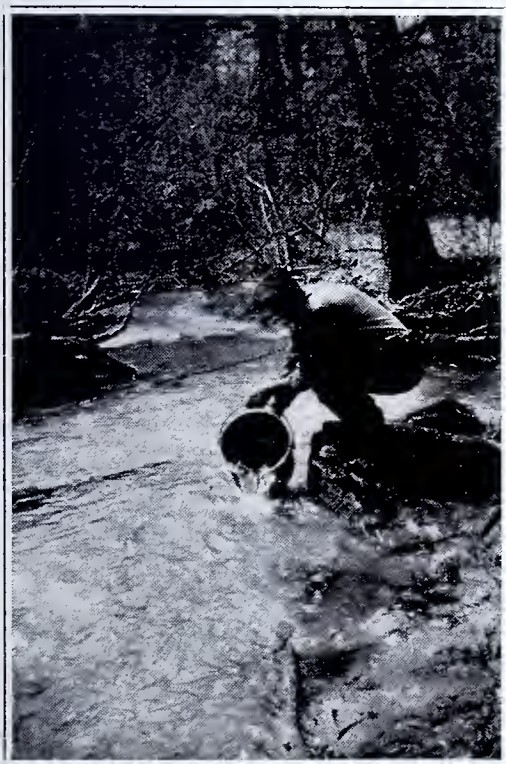
OCTOBER, 1934

VOL. 3

No. 10

EDITORIAL

Conservation Key-Men



I firmly believe that Pennsylvania sportsmen are, as a group, outstanding in world conservation. The splendid support they have given conservation of both fish and game in the Keystone State merits praise of the highest order. Without that basic support from those who enjoy the fine sports of fishing and hunt-

ing, no conservation program can succeed in a true sense of the word. Let us consider several phases of the varied program to better fishing during the past year in which our sportsmen participated.

Early this spring, we announced adoption of a program for the stocking of over 2,000,000 brook trout and brown trout fingerlings. In order that this stocking could be made most effective, distribution to many of the smaller trout waters in the various counties was necessary. When the plan was announced, cooperation of the sportsmen in distribution was stressed. They were to meet the Commission's trucks at central designated points and personally to distribute the fingerlings. Saying that the response to this plan was satisfactory would be too slight praise. It was amazingly enthusiastic. Probably never in the history of the fish conservation program in Pennsylvania have our sportsmen played such a vital part. The conscientious manner in which they stocked these fingerling trout is proof positive that our better fishing drive is being backed.

To stress only one feature of our stocking program in which the anglers figure is, however, misleading. Meeting the trucks that carry trout over legal size to the various counties, they assist in this distribution; they are equally active in stocking bass and other warm water species. Theirs is an unselfish interest in promotion of the sport.

In many sections of the Commonwealth, our sportsmen have cooperated in improving trout streams. When, two years ago, we advocated the building of dams, current deflectors, and covers in trout streams to increase their carrying capacity for trout, response to the plan was immediate. This year definite progress has been made on a number of streams by conservation-minded sportsmen who look to the future for better fishing conditions and have given of their time and efforts to attain that end. At Spring Creek we have established a model stream improvement project to serve as a guide in constructing improvement devices. We have also issued a pamphlet entitled "Stream Improve-

ment Suggestions" that is free for the asking. Just how effective dams, covers and deflectors may be in increasing the carrying capacity of streams for trout has been amply demonstrated at Spring Creek; hundreds of sportsmen from 66 of the 67 counties of the state, who visited the project this year, were in a position to formulate plans for the improvement of streams accessible from their homes.

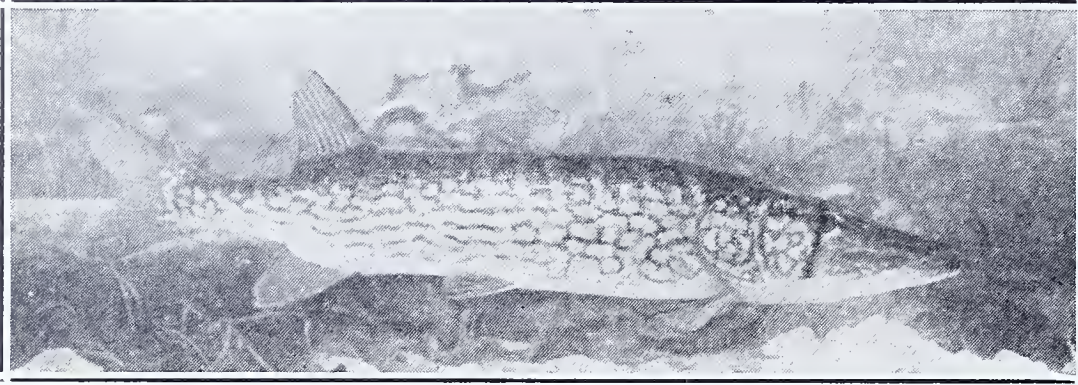
Perhaps one of the most vital features of the better fishing program in Pennsylvania to which our sportsmen have been outstanding contributors, however, is the fostering of good will between farmers and fishermen. In a number of instances, organized sportsmen have instituted vigorous campaigns to promote amity between land-owners, fishermen and hunters. They have succeeded through their efforts in making available for our anglers many waters that formerly were posted. Without doubt, this splendid friendship campaign will bear fruit for many years to come. It is highly essential that it does, for posted lands in a state so densely populated as Pennsylvania must eventually work hardship on those who enjoy sport with rod and gun.

During the summer, increasing attention was given the watersnake by sportsmen. Realizing that these reptiles rank as major natural menaces to fish life of the inland waters, fishermen on many streams staged extensive snake hunts. By killing a large number of watersnakes and encouraging others to do so, they have greatly increased the chances of survival of stocked fish in streams formerly infested by watersnakes.

Briefly, the fisherman today is a major factor in improving Pennsylvania fishing. The whole-hearted support given the better fishing program by those who enjoy angling is one of the most significant features in our conservation movement. In every sense of the word, many of our fishermen are the key-men of conservation.

Commissioner of Fisheries.

PICKEREL



THE common or eastern chain pickerel may be truly termed one of Pennsylvania's native game fishes. It shares that distinction with the Chautauqua muskellunge of which Rafinesque said in 1818: "It is one of the best fishes in the Ohio; its flesh is very delicate and divides easily, as in salmon, into large plates as white as snow." That both of these voracious fishes, members of the pike family, should have been the only game species, as modern anglers classify the group comprising the bass and pike, native to inland waters of the Keystone state is a coincidence that should be noted in passing. Certain it is that in early times the chain pickerel abounded in most of the creeks and rivers, while its giant cousin, the muskellunge, was limited in range to a few of the lakes in northwestern Pennsylvania.

The chain pickerel is as typically representative of our waters as is the charr or brook trout. To the children of the red men, it was as well or perhaps even better known. The Indian lad, stealthily making his way along the shores of lakes, ponds and streams in quest of fish with bow and arrow saw these slender pickerel lying motionless in shallows and tiny bays, or when frightened darting away like swift shadows. Under primitive conditions, when all of the warmer waterways teemed with life, these game fish attained large size.

Popularity of the pickerel today may to a certain extent be termed sectional. In northeastern Pennsylvania, for instance, with its hundreds of lakes and ponds, these native fish are exceptionally plentiful. To many of the fishermen living in Wayne and Pike counties, the pickerel is every bit as important a game fish as the bass and perhaps even more so. In central Pennsylvania, the bass holds a decided edge, although pickerel taken from many of the streams add variety to a day's creel. The range of this fish throughout the Commonwealth is so general that it is fairly well known to many Pennsylvania anglers.

Description

Green of varying shades is the basic color of the pickerel. In shape it is sharply compressed near the tail or caudal fin, while its greatest body depth is from the anal fin at the vent to the base of the gills. The mouth is very large, its cleft equalling about

one-half the length of the head, and somewhat suggestive of the bill of a duck. Coarse, sharp teeth of different sizes arm its jaws, while the lower jaw is longer than the upper. A band of small teeth are also present on the tongue. The eye is located midway between the tip of the lower jaw and the rear margin of the opercle or gill cover. A golden lustre is to be observed on the sides of the fish, which are marked by numerous horizontal dark lines and streaks. These lines are so joined that they form a chain-like appearance. The fins are plain. A dark band is located below the eye.

Persistent Killers

In a recent issue of the *ANGLER*, spawning habits of the pickerel were considered. After spawning in early spring, the adult fish return to the lily pad pockets, weed beds and other cover in which they lurk during most of the year. Frequently, however, their range in quest of food may extend over a large portion of the flat they frequent. Occasionally, while still-fishing, a fisherman may observe one moving about in clear water of moderate depth.

The voracity of this long, slender fish is amazing. It has been known to strike and devour two or three large chubs or shiners and then not hesitate to take another. Time and again, when fishing artificial lures, the persistence with which pickerel pursue their prey has been demonstrated. On numerous occasions, fishermen while casting have had pickerel follow the lure virtually to the point at which it was to be taken from the water before hooking in a final savage lunge. An incident of this type occurred on a central Pennsylvania stream in late July. When the casting lure struck the water in a small lily-pad pocket, a sixteen inch pickerel hit it but failed to connect. Three more times on its journey back to the writer the lure was struck, and then, within five feet of the rod tip, this same fish impaled itself on the hook and was landed. This boldness and apparent deadly intent to kill is an outstanding factor in making the pickerel a favorite game fish with Pennsylvania fishermen.

During the so-called "dog-days" of August, anglers familiar with the habits of pickerel do not anticipate much sport with the species. In our Pennsylvania streams, these

fish have a tendency to develop sore jaws and generally their sharp, piercing teeth become quite loose. In the interval covering this sore condition of their jaws, they feed sparingly as a rule and catches are in consequence light. It is during September and October, when mist hovers over the streams and ponds and there is a chill in the air, that pickerel fishing is at its best. Just as it spurs feeding activities of bass, cooling of the water stimulates the foraging tendencies of the pickerel. Autumn also finds them often congregating in the deeper pools and flats of a stream. October fishing, whether with live bait or casting lure, yields fine catches of these native game fish.

Fishing for Pickerel

Pickerel fishing might be grouped under three heads—still-fishing with live bait, bait casting with plugs and other heavier artificial lures, and fishing with the fly-rod and fly-and-spinner combinations or other light fly-rod lures. So rapidly has this last named method gained in popularity in recent years that fly fishermen are finding real sport on pickerel waters. A twenty-inch fish on a light rod is capable of providing some real thrills before it is landed.

For many years, the long cane pole, a sturdy line and an active chub or shiner as bait has been a recognized and generally conceded successful method of pickerel fishing. To many country boys, these fish are known under the name of "pike" or "grass pike," and "pike fishin'" as a form of angling in rural sections is a familiar sport to the followers of Izaak Walton. In still-fishing, large chubs or shiners, many of them five inches long, are frequently used and some real old-timers of the pickerel clan bow to the skillful manipulators of the cane pole when a tang of frost is in the air.

In line with live bait fishing for pickerel, an interesting incident occurred several years ago on Tuscarora Creek in Juniata County. Elmer Campbell, Lewistown angler, was using a stone catfish for bait and fishing for bass in one of the deep flats of the stream when he had the surprise of his life. On the back-cast, his line became tangled and the catfish fell just at the edge of the stream. Concentrating on untangling the line, he paid no more attention to the bait which was kicking about in the shallows. He had just succeeded in removing the tangle when a big pickerel surged at the catfish, seized it, and darted again to deeper water. On its first run it carried about fifty feet of line from the reel. Campbell managed, after a hard fight to land the fish which measured 26 inches in length and was unusually heavy in girth.

Pickerel will very often kill live minnows or stone catfish apparently for the mere sake of slaughter. In clear water, their action after seizing a minnow is interesting. Not infrequently they will hold it for as long as five minutes cross-wise between their jaws before turning it to shallow. Then again, after killing it, they occasionally will release the prey without swallowing. Many pickerel are lost in live bait fishing by pulling too soon after the first strike. This usually comes with either a short run, or a brief, chopping tug. Old-timers at live bait fishing for pickerel advocate waiting for the fish to start moving steadily away after the pause before setting the hook.

Another method of fishing with the cane pole is to use a double hook with a chub back of a swivel. A moving bait is usually necessary in luring these fish to strike. In using the short bait casting rod and plug or other heavier lures, the fisherman often concentrates his casting in weed bed pockets and tiny bays in the lily pads. The instant the lure strikes the water, retrieving is started, for, if weedy waters are being fished, permitting a sinking bait to settle too deeply often results in finding a trailer of weeds on the hooks. Some of the most popular and effective artificial casting lures for pickerel are equipped with a single hook and provide real sport in which care and skill in landing the fish are necessary factors for successful fishing.

In fighting tactics the pickerel is peculiar. While occasionally a heavy fish will battle doggedly near the bottom until it is landed, a tendency frequently displayed is just the reverse to this procedure. Upon feeling the hook, the fish often will twist about in its efforts to escape. Its soft jaws tear easily,

and this method of battle is sometimes highly effective. It is just this twisting manner of fighting that has lowered the esteem of some of our anglers for the pickerel as a game fish. Nevertheless, with many fishermen it is rapidly gaining favor as one of Pennsylvania's leading fishes from a sporting angle.

The voracious instinct of pickerel is a major handicap to raising them in confined areas and in consequence they are not propagated at the hatcheries. With a vast majority of the fishermen in Pennsylvania, smallmouth and largemouth bass hold first rank as game fish and their stocking is a major consideration at the Pleasant Mount hatchery. However, natural reproduction of the pickerel in many waters is sufficient to maintain the supply of these fish.

Just how well the native pickerel and the introduced bass get along in the same water is a matter open to debate. Observation over a period of years in a central Pennsylvania stream has revealed an interesting fact. Fifteen years ago on this stream, smallmouth bass were extremely

plentiful. At that time, while some pickerel were taken, they were not in any sense of the word numerous. Intensive bass fishing since that time has greatly reduced the number of smallmouths, and today pickerel are apparently staging a strong comeback. Whether intensive competition for the live food supply of this stream fifteen years ago resulted in a thinning of the pickerel's forage by the aggressive bass with subsequent dropping off in the number of the latter species is a matter for conjecture. One fact cannot be disputed, however. The rapidity with which the bass have increased in our streams and lakes since their introduction obviously has placed them at the peak as dominant game fish in Pennsylvania inland waters.

Now that October days are here, hundreds of our anglers will in all probability invade the haunts of the slim and aggressive pickerel, a game fish dominant in waters of the Keystone State when the frontiersmen and trappers pushed beyond the mountain barriers to lay the foundations of a great Commonwealth.



GOOD PICKEREL WATER—A NORTHEASTERN PENNSYLVANIA LAKE

When the Leaves Are on the Water

By N. R. Casillo

THE bard who wrote the line "what is so rare as a day in June," possibly had never experienced a mellow, hazy, invigorating day in mid-October; for if he had he would have revised the quoted line. And for precisely the same reason, nine out of every ten anglers rave about the spring and summer fishing and utter not a word about the fall sport. So, it may be safely concluded that if the nine had once experienced a fall day on the water there would be a wild scramble to revise vacation schedules, if vacations are still in vogue.

During the vacation season Conneaut Lake is a resort spot that teems with activity. The hardy (perhaps foolhardy), angler who ventures out on its waters after dusk takes chances on being cut down by the numerous speed boats zigzagging about like a flock of whirligig beetles. It is the opinion of many that these selfsame watercraft make the summer fishing highly erratic. Most of the time the fish are down in the deepest parts of the lake to get away from the harrowing surface disturbances. Of course, periodically they get hungry and are forced to come up to feed. It is then that the lucky angler who happens to be on the grounds makes a good catch. The above is simply an opinion, so accept it for what it's worth. Candidly, however, I must confess that it was the chief factor in prompting me to abandon summer fishing on Conneaut and discover its autumnal possibilities.

Also, one should consider other factors that enter into the making of fall fishing. First of all, the cold nights and mornings can't help but impart their vigor and tang to the enervated summer waters. Aided by the autumn winds and rains it takes on a sparkle so characteristic of the fall season. One can readily understand that the conditions are such as to make the fish (particularly the big ones), hungry, restless and savage.

An October day on Conneaut is so different as to make one think that he is on strange waters. The only noises disturbing the restful silence really appeal to the senses. It may be the explosive cough of a solitary outboard pushing its way across the lake, or the rattling of an anchor chain and the squeaking of oars as some fellow fishermen leave for better grounds. The brisk, hazy atmosphere, the slow breathing of the lake, the autumnal colors, a few fish in the basket and a reasonable amount of activity of those in the lake combine to produce the "fixings" of a long-to-be-remembered day.

It is one of those unusual days that I want to describe. Bracing air mellowed by a golden sun pervaded us as we gently rocked in the hardly perceptible swell off of Wolf Island in Horseshoe Basin. It was the middle of the afternoon, too early for good fishing. But we cared not for we were absorbing quantities of sun and ozone as we sleepily drooped over our bait rods. Yes, we were still-fishing, which, according to Ike Walton, is that type of angling to which man harkens, as it provides plenty of time for discourse,

or words to that effect. At any rate we were still-fishing, using minnows and succulent night crawlers, and participating in no discourse at all, for Bill was in the arms of Morpheus and I was fast succumbing to the wiles of the same lady.

At some indefinite later time I was awakened by a snort from my companion and by the sudden lurch of the anchored boat.

"Humph, nearly fell out of the boat," he grunted. "Must be getting along in the day," he added surveying the western sky.

"Yes," I agreed, "and these fish should be starting something."

"Better take a look at my bait," Bill yawned, reaching for his rod. "It's about—," he began, but "SNAGGED!" he suddenly exploded. I turned in his direction and the sudden change in his expression was almost appalling. His mouth was moving, but

calmly as I could, for its size was breathtaking.

"Can we land him?" came the query.

"Think so, if we take it easy. Remember, your line is not heavy enough to horse him in," I cautioned. "Just bring him up within reach."

As you doubtlessly have guessed, that turtle didn't submit immediately. Whenever its head was forced above water, the powerful legs of the brute would begin churning and down it would go. This disheartening procedure continued until I managed to grasp its tail and got it aboard. And there on the boat bottom, he sprawled his ugly bulk until we got him into a sack. He weighed thirty-one pounds!

After this exciting preliminary we settled down to an hour of the finest fishing imaginable, for in that time, and in the same spot,



A STRING LIKE THIS IS SOMETIMES POSSIBLE

uttering nothing; his eyes popped in the most profound look of amazement—and a glance at his rod sufficed as an explanation. That member was bent double, and the snag, as Bill had termed it, was dragging the line slowly but powerfully in a little circle.

"Why, I can hardly hold it," he finally managed to sputter.

Whatever was hooked at last decided to make for the middle of the lake. Leisurely but determinedly the line slowly unwound from the protesting reel, for Bill was applying a heavy thumb. After stripping some thirty feet of line whatever was hooked changed its course and slowly returned toward the boat, giving my companion a chance to recover nearly all of his line.

"What do you suppose it is?" he breathed, as he laboriously cranked the reel.

Peering down through the clear water I discerned a Gargantuan creature slowly rising toward the boat. I could see the tight line at the corner of its wicked mouth, its little eyes snapping with anger.

"It's a big snapper," I announced as

we landed two 'lunge and three bass, nearly eclipsing the catch of another year consisting of four 'lunge and one four and a half pound bass. The fish were on the prod and they came to us. That's Conneaut—capricious.

The first lungie took the bait (a medium size sucker), as soon as it had hit the water. The tremendous boil that the fish created as it came to the surface indicated the species. Bill, the fortunate one did a masterful job of handling in spite of his excitement. However, I was no less excited for when I endeavored to hit the ugly head with an oar after the *nearly* spent fish had been brought alongside, I made a clean miss. Bill yelled like a disappointed Indian cheated out of a scalp. I didn't risk it again, but reached over, held my breath and inserted a thumb and forefinger into the bony eye sockets of the fish and hauled it aboard. I've landed muskies similarly a number of times and constantly wonder why they don't snap at the hand. Perhaps, some day I'll discover that they will.

Time passes all too quickly on occasions

like this, and we were oblivious to its passage until long shadows crept over the fields and sparse woodlands, and then over the water.

The stillness of dusk pervaded everything. The croaking of a lone bittern passing overhead only tended to accentuate the intense silence. As in a dream we sat there staring at the flaming sky. We were aroused from our reverie by the rattle of an anchor chain as it was hauled aboard a distant craft. Then the hoarse and spasmodic coughs of an outboard and its settling down to a loud purr, informed us that other fishermen had been abroad and were now going home. The fish were no longer active, but we loitered on content to absorb that all-pervading peace that had settled over the lake.

The peaceful picture was suddenly shattered as effectively as a sledge would shatter a boudoir mirror. A fish had taken my bait, carried it ten or fifteen feet and then hooked himself; his surprise being no greater than mine, for up until then I had done nothing. The fish swished out of its element, arched over the water and landed ten feet beyond the point of egress. Another lunge! Down it went, my reel screeching wildly. Another wild jump, a short rush



BILL AND HIS BIG SNAPPER

and then a sort of a tug-of-war that slowly wore the savage strength and spirit of the splendid fish. In a short time he was in the boat beating the boards with his broad caudal.

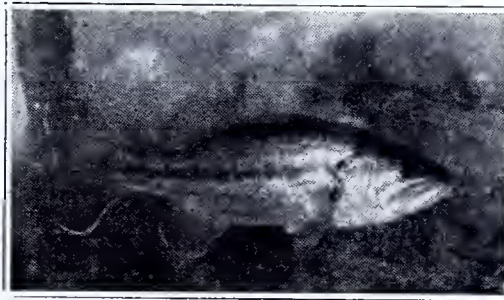
Two fine muskellunge and three good bass, a fit catch for so splendid a day; a truly remarkable one for the temperamental lake.

Some years ago I made my debut at Conneaut at the insistence of a friend shortly after he had experienced a day like the one described herein. His enthusiasm, and the certainty of making a catch had me keyed to a fine edge. Imagine his chagrin and my disappointment at not getting a single fish, indeed, not even a strike the livelong day. This was my experience on several other subsequent outings. And it puzzled me for I often saw the fish, some were brought in by other anglers, and conditions indicated that there were plenty of them in the lake. So, I finally came to the conclusion that it was necessary to be at the scene of action when the fish opened up. Simply a matter of chance. However, I have been fortunate enough to have experienced four such occasions since my debut; three of them occurring when the leaves were on the water.

WATER TEMPERATURE AND FISH SPAWNING

In the fresh water fish world are spring spawning fish and fall spawners. The fall spawners become ripe or ready to give forth their egg crop at a lowering temperature of the water; in other words, as the water becomes chilled at the approach of colder weather it tends to hasten the internal development of the eggs. This applies principally to the white fish and the cisco of Lake Erie. Primarily, the brook trout spawn on an even temperature, that is, trout will become ripe if there is not a variance of water temperature; however, unnatural conditions existing in the majority of our trout waters today have somewhat changed the spawning habits of the trout and they likewise may be termed fall spawners or fish spawning on a falling temperature. The yellow perch, pike perch, pickerel, and black bass are just the reverse as they spawn, or become ripe, on a rising temperature and are known as spring spawners.

This rising temperature is of vital importance in the reproduction of these fishes. For instance yellow perch, that are kept at an even temperature, become egg-bound and cannot throw off their egg supply, resulting generally in death. The exact time that the spring spawners or those fish that produce their egg crop on a rising temperature become ripe, is governed entirely by the temperature factor—the eggs being thrown off when the water reaches a certain degree of temperature. The water temperature in most ponds and lakes is influenced by surrounding air temperatures. For a number of years the Board has made intensive studies of the spawning activities of the largemouth bass in a pond in northeastern Pennsylvania. Water temperature plays such an important factor in the spawning of these fish that the investigators use as a guide the development of certain trees and shrubs along the shore line. For example, over a period of eight



LARGEMOUTH BASS

years without fail, the majority of the schools of largemouth bass fry in this pond are ready to leave the protection of the parents when a certain clump of laurels on the eastern shore of the pond is in full bloom. This laurel is used as a barometer in the eggs and baby bass development. Likewise, on another area where the yellow perch are being carefully studied, their spawning is associated with the bloom of the pussy willows.

The medical student said to the well-known doctor, "And is it true, sir, that fish stimulates the brain?"

"Probably," replied the doctor. "But one thing is certain. Going fishing stimulates the imagination."

Play a big bass or pickerel plenty long before trying to bring him in. Your catch will give you more sport, and your chance of getting him will be increased.

When the water is low and clear in a bass stream, don't wade or splash about more than necessary. During such periods, bass are shy, particularly in smaller waters, and the careful fisherman usually takes a better catch.

In minnow fishing, old timers at the game usually fish downstream. The force of the current aids in keeping the minnow revolving.

An October Brownie

Take it from C. R. Ericson, taxidermist at Philipsburg, a brown trout hooked in late October is no cinch to land. Ericson was casting for pickerel in Kephart Dam on the Black Moshannon, Center County. Heavy catches of these popular game fish were made during the season, and with autumn fishing at a peak, he momentarily expected a strike from one of the big fellows.

The strike came, and so sudden and violent was it that the boat almost capsized. After a hard struggle, with Ericson having visions of the record-breaking pickerel for the Black Moshannon in mind, a big fish was brought to boat. It turned out to be a fine 20-inch brown trout, beautifully marked and heavy in girth.

PROBLEM

Secretaries of fish and game associations are expected to solve plenty of problems, if you ask George Zimmerman, secretary of the Lehigh County Fish and Game Protective Association, Allentown.

One day George received a phone call from a friend who asked him to take charge of a colony of bees that had swarmed in his (the friend's) yard, and imprisoned him in the house.

"I am willing to help a fellow man in any emergency," writes George, "but I declined this invitation with many thanks. I suggested, however, that the man at the other end of the telephone line might relieve the situation by putting salt on the bees' tails, in which case they are easily handled."

Native Trout Flies

By Chas. M. Wetzel

EDITOR'S NOTE: In his concluding article on *Native Trout Flies*, Mr. Wetzel portrays some of the charms of fly fishing for trout. And here's good news for ANGLER readers. Next month, that favorite bass bait, the helgramite, is the topic of the writer of these articles.



SILVER SEDGE
CADDIS



CINNAMON SEDGE
CREEPERS,



WINGS FOLDED



WINGS SPREAD
CADDIS FLIES.



COW DUNG



BLUE BOTTLE



BLACK GNAT



DUNS
AND
SPINNERS.

SKETCHES BY THE AUTHOR

IN this the third and concluding article on our native trout flies, I shall not attempt to go into so much detail, but shall cover in a general way those flies commonly observed on our waters. First we shall take the Caddis Flies (Trichoptera).

Like the insects of the two classes already covered, the flies of this class lay their eggs upon the water, or attach them to stones with a jelly-like substance, and the larva, when hatched, at once starts making the case, in which it spends the larval stage; these cases are sometimes constructed out of tiny sticks and bark; then again, they may be composed entirely of sand, stone and pieces of gravel. These they cause to adhere by means of a glue-like thread until they have formed about themselves a case, the outside covering showing the substance of which it is composed, while the interior of the structure is perfectly smooth and round, and apparently lined by the thinnest possible coating of the glutinous substance that assisted in its construction.

While abiding in these cases or sheaths they are known as Caddis Creepers or Caddis Worms. The cases vary in length from a half-inch to an inch and a half, and their diameter (stone case) is about three-eighths of an inch. The larva, by thrusting forth from its tubular case its head and forefeet, drags the case along wherever it desires to go. It is usually found in the still, quiet, shallow water, and the portable house

is one of nature's safeguards to protect it from the jaws of larger predatory insects and fish, although I have caught trout where examination of their stomachs revealed that the entire stone case including the larva had been eaten.

The lower end of the case is practically closed, having only a small air hole. It is very difficult to pull the caddis worm from its case without tearing it in two, for at the hind end of the body is a pair of horny hooks which take firm hold on the inside of the case; to remove it without violence, it is best to split the sheath.

When ready to assume the pupa form, the larva closes up the opening of the case with a thick silk mesh. While so enclosed, the insect undergoes a change peculiar to the pupa, the wings form, and the body alters its shape. After a time the fully formed pupa (which is enveloped in a thin skin) tears open the silken screen door at the mouth of the case and rises to the surface. The thin case then splits open, the imago or perfect fly emerges and grasps some object, upon which it can climb above the water, to expand and dry its wings.

The imago has two pairs of membranous wings, which are usually covered with soft clinging hair. In some localities they are known as water moths, since the general appearance of the body is mothlike; the hind wings are a trifle shorter and broader than

the fore wings and both pair rest slanting like a roof over the abdomen. Their habits are little known, and it is claimed that there are over sixteen hundred species. The majority are brown in color, with white or silver next predominating.

Among the well known imitations to the angler are the silver sedge, cinnamon sedge and the light and dark caddis flies. I have kept some of the creepers alive for a long time in fresh water in a screened compartment, and from my personal observations, I believe that the silver sedge builds its case out of stones while the brown variety, or cinnamon sedge, constructs its home from twigs and bark. The silver sedge is very effective for brown trout.

The Cowdung

It is claimed that this fly should be used on windy days, as the natural fly is found upon the water only when blown there by strong winds; but it has been demonstrated that the fly is equally successful at other times, which proves the wind theory unreliable. The color of the male when newly hatched is a bright yellow, that of the female a greenish brown. The larva of these flies feed upon the excrement of cattle, and the females may be seen hovering in its vicinity, as they lay their eggs near or upon it. They belong to the family of Diptera, and are rare in some localities. Yet in the Pocono Mountains they are fairly abundant. At times

the artificial is a very good fly, especially during early spring.

The Blue Bottle

The blue bottle, or blow fly, is so familiar to all of us that a description seems unnecessary. It deposits its eggs upon decaying vegetable matter and from them are hatched larva or maggots; they then bury themselves and develop rapidly into the perfect insect. They are frequently down on the water on windy days, when they appear the most successful.

The Midge

This fly belongs to the order of Diptera and appears on the water during July and August. It is small in size, and in appearance resembles the mosquito, though a casual glance will immediately distinguish it, due to the short feathery antennae or feelers on its head. It is more or less a nocturnal fly and at night can be seen in large numbers swarming around the lights near the streams. It is especially abundant on Wallenpaupack Creek and on the lake itself, where the entire surface is at times sprinkled with the floating spent fly. These midge flies (artificial) are good for taking trout late in the season and are probably responsible for the old angling maxim: "Use small flies when the streams are low and clear."

The Black Gnat

During the months of May and June, this fly may be seen in swarms, skimming over the surface of the brooks at great speed for a few yards up and down the stream. Appearing on the water at a time when fishing is usually at its best, the annoyance caused by these insects is particularly aggravating to the angler.

I have known times when my artificial dry fly, floating downstream over a rising fish, was completely submerged by a swarm of black gnats, and just at a time when a strike appeared imminent. They seem to appear in greater quantities on the smaller mountain brooks, and on Weiker Run they were especially plentiful this summer.

On cold windy days and in dark shadowy spots, they may be observed clinging to the large, damp, moss covered rocks, just at the water's edge; when alarmed or disturbed, they dash for the water, and skim over the surface at lightning speed.

I have caught trout that were literally gorged on this fly, and its artificial occupies a position of respect and admiration in every angler's fly book or box. The wet fly, used after nightfall, is one of the angler's favorites, and has accounted for many and large brook trout. The black gnats, belong to the family of Diptera and in size are very small.

The Duns

These flies are erroneously believed by some to belong to the Caddis fly group, but in reality they belong to the family of Ephemeroidea, or May Flies. They are considerably smaller than the Drakes and are clothed in a variety of colors, but their general characteristics, so far as relating to their habits and general shape of body, remain the same. They are in the sub-imago stage, but imperfect and preparing to cast off a fine skin that envelops them, (wings and all,) to become spinners. What has been written about the Drakes in the August issue of the ANGLER applies equally to this group, with the exceptions mentioned. Among

those commonly recognized by anglers, are the Olive Dun, Blue Dun, Iron Blue Dun, Pale Evening Dun, Whirling Blue Dun and the Pale Watery Dun. These flies are our most common, and are found on practically all of our trout streams.

The Spinners

These flies are the imago or perfect flies of the Dun group, and they differ from the Duns only in color and transparency of their wings. Chief among these are the Golden Spinner, Jenny Spinner, Brown Spinner and Red Spinner. They belong to the family of Ephemeroidea.

I have attempted in a general way to cover those flies commonly observed on our streams. There are thousands of others not covered, yet the majority of them fall under one of the groups or families already mentioned. It is a fascinating study, especially to the anglers who tie their own artificials, a sport having a charm distinctly its own, and which is an excellent substitute for actual fishing, especially during the long winter evenings, when one's thoughts naturally turn to the streams.

Then it is that the sketch and careful description of that natural fly, upon which the trout were feeding so avidly last spring is brought forth, and an attempt is made to copy or imitate it. But it is not alone in imitating the natural insect where the fly tier experiences his greatest pleasure; rather it is in fashioning new designs,—creations of fancy, which, while bearing no resemblance to the natural insect, yet take their toll of trout each season.

My experience has been that the flies most effective in our state are the inconspicuous dull colored ones, and that those brilliant gaudy affairs, like the Silver Doctor, Paramachene Belle, etc., are here practically useless for taking trout.

Before concluding these articles, I would like to reminisce a short while on a certain section of our state where the streams are exceptionally rich in insect life, and where the beauty and rough grandeur of the mountains draw one back, year after year.

Flowing through what was once the greatest timber belt in eastern United States, Kettle Creek winds its meandering way. Here long ago, the axes of red-shirted lumber-

jacks rang through the forest, and sent great virgin pines crashing to the ground, later to be formed into rafts, and floated down the Susquehanna River to the mills.

Huge, decadent stumps, projecting eight and ten feet above the ground, and far above the snow crust in winter, bear mute and silent witness to the wasteful extravagance prevalent in those days when the great pines were cut off. Lurid and colorful tales of fighting, gouging, and old lumbering days still emanate from the region and grip the imagination.

Here it was, where that famous Norwegian violinist and pioneer, "Ole Bull," established his colony. History has it that after searching throughout the country for scenery comparable to his native Norway, he finally decided on this location.

Irrespective of the time I go there, I receive the same thrill, although my preference is around the middle of May. It is then that the creeks have lost their earlier turbulence, and flow placidly with just a pleasant murmur. Rising up on all sides in majestic splendor, the mountains literally hem one in; low down, they show the first faint yellow of spring; higher, the grey of winter still clings on; white birches, cut their sharp branched veined patterns against the steep, sombre slopes, and here and there, perched crazily on the summit, stand the rotting hulks of virgin pines—relics of a past generation.

But it is at twilight, when the shadows lay heavily over the land, that the country exerts its greatest appeal or fascination. A light mist starts curling over the streams, and as if by magic the flies appear. The still air hums with the somnolent drone of myriads of winged insects! Mosquitoes, gnats, and other pests, which make life miserable, mix with an easy familiarity among huge swarms of duns, stone and caddis flies.

Below, where they dip and dance over the water, the trout are rising furiously, the little fellows often leaping clear of the surface to snatch out of the air some luckless insect, which had ventured too close. The larger trout rise leisurely, but with deadly intent to suck in their prey, causing no more commotion on the surface than a large rain-drop. Yet by watching closely, one may see

(Continued on page 13)



A BEAVER DAM ON KETTLE CREEK

THE BULLFROG

By C. R. Buller

Deputy Commissioner of Fisheries

PART TWO

UNIT No. 3, a portion of the Pleasant Mount Hatchery, was one time devoted to the culture of yellow perch, catfish, and sunfish, at which time the area contained many adult frogs, and yearly produced a remarkable crop of tadpoles. Three years ago this area was changed into a bass unit, with the result that the majority of the adult frogs gradually migrated to more favorable quarters, where their offspring would be afforded more protection. Another interesting observation I have made in this connection, is that when small sized frogs are thrown some distance from the shore of an adult bass pond, if a bass strikes at the frog and misses, the frog will lie on the water surface practically motionless until the wind or current carries it to the shore. It seems to realize that it would be fatal to make a move. Bass prefer moving objects and will rarely touch the frog when not in motion. However, when thrown near the shore line, they will not resort to playing possum, but will make a desperate effort to reach land, before being overtaken.

Color changes are also great protection. For instance, during hibernation, frogs lying on the dark pond bottoms, will become very dark, making it difficult for them to be seen. As they leave their hibernation, and spend their time among the green vegetation of the shore and pond, they take on a lighter, greener color, which blends with the surrounding foliage.

When frightened by aquatic enemies, as the fish or turtle, if near the shore, it will seek protection on land. If frightened by land enemies seek protection by diving into the water, generally coming to the surface again, after a series of short, swift plunges, some distance away. Probably the reason the frog swims under water in a series of swift plunges, is because they swim with their eyes closed, and must stop frequently to get their bearings.

Hibernation

Frogs spend probably one-half of the year or more, in hibernation. At the approach of fall they seek the pond bottoms, where the water depth will protect them from frost, and lie dormant until the coming spring. In some instances they bury into the mud of the pond bottoms, and in others stay under submerged logs, roots, rocks, etc.

During this period, they consume no food through the mouth, nor breathe any air through the lungs. They can live over those long periods, without feeding, for the reason that they are cold-blooded and their body activities lessen greatly with the lowering of the surrounding temperatures very near the freezing point, the general, vital activities of the animal run down so low that little expenditure of energy is required to keep alive. The little respiration required, takes place through the skin, and the small amount of nourishment is taken from materials stored in the tissues.

As compared with some other species, they are later coming from their hibernation. The time depending entirely, upon the air and water temperatures.

In drawing down our ponds in the late fall, we often find frogs in their winter quarters. If the temperatures are near the freezing point they are very helpless, lacking the ability to move. Where this is the case, those that can be found are collected and transferred to other quarters. In a number of instances, in the early fall months, we have taken frogs from their hibernation and transferred them to the hothouse. In a few days, after coming in contact with the warm atmosphere they take on a lighter color, become very active and start to feed ravenously, which follows that if frogs were confined where the yearly temperatures would be comparatively high, they would not hibernate, and would feed every month of the year. Just what effect this would have on the process of reproduction, I do not know.

Spawning Habits

As before stated, in Pennsylvania the bullfrog deposits its eggs any time from June 15 to August 1, depending upon the water temperatures. The earlier the season, or the earlier the water temperatures rise, the sooner the spawning will take place. In some of our large ponds, say of one hundred acres, frogs that have made their homes in the shallow waters of bays or other protected areas, where the water temperatures are considerably higher than in the main body, spawning often times will take place several weeks in advance of those having homes in less protected areas.

During ovation, the male frog holds the female behind the forearms, his hands clasped to her breast. As the eggs are being extruded by the female, the male discharges his spermatid fluid over them, and fertilization takes place.

The Eggs

The spawning habits of the green frog and the bullfrog are very similar. This also is true with respect to the places sought for depositing the eggs. As their spawning periods somewhat overlap, eggs of both species are found in the ponds at the same time and in similar places. They can easily be distinguished by certain technical differences, in a manner they will comprehend. For this reason, we generally depend for identification upon the size of the jelly mass. The masses of the green frog eggs are considerably smaller, counting from 3,000 to 5,000 to the string, which covers an area of from 10 to 14 inches in diameter, while the mass of the bullfrog eggs average from 10,000 to 25,000, and cover an area ranging from 18 to 24 inches in diameter.

Without question, the number of eggs deposited by a female will depend upon her age and size. From a commercial point of

view, the large number of eggs deposited by the bullfrog, in comparison with the other species mentioned, can be looked upon with favor, as less breeders would be required to produce the desired crop of offspring.

When the eggs hatch, the tadpoles come forth in the form of tiny, black, helpless creatures about three-sixteenths of an inch long. For the first few days of their lives, they can be seen in groups, clinging to submerged brush, aquatic plants, gravel, rocks, etc., but as they gain in strength, these groups break up and each individual leads a more or less, independent existence.

Experiments in Transferring Eggs

The larger the tadpole, at the time of transformation into the perfect frog, the larger will be the frog. Thus, in our opinion, its chances of survival, will be proportionately increased over the smaller of its own kind. The rate of growth of the tadpole depends upon environmental conditions, with special reference to the water temperatures and food supply.

In rearing the tadpoles, in connection with fish culture, sufficient food for the maximum amount of tadpole growth, over a given period, cannot be introduced into the ponds, for fear of water contamination, which might prove fatal to the fish life. Again, four varieties of tadpoles are present in our ponds, during certain seasons of the year, all of which are consuming food intended for the bullfrog tadpoles.

With the thought of overcoming these conditions, in 1927, experiments were conducted in transferring bullfrog eggs from the various ponds and placing them in a tadpole nursery, where they could be given the quantity of food needed for their rapid growth, and also do away with the expense of feeding the undesirable species. In various stages of their development, approximately one hundred egg masses were transferred into the nursery, with the result that very few hatched, and the experiment appeared to be a complete failure. The first thought was that the transfer had proven injurious to the egg. However, after checking up on the egg crop at the other hatcheries where they had not been molested, it was found that during this season, the mortality was exceptionally high among the eggs, just before hatching, and among the very young tadpoles that had hatched. This left a doubt in our minds whether the failure could be attributed to the handling of the eggs, or whether it was the disease among the eggs and the very young tadpoles that appeared to be prevalent throughout the state. Consequently, it is our thought, to try this experiment again, this coming year.

The Tadpole

Inasmuch as our parent frogs are not confined, but have free range of the hatchery ponds, it follows that other species of frogs would also use these ponds as spawning grounds. Probably 6 or 8 species of frogs eggs are deposited in the ponds throughout the seasons. The four following species, the bullfrog, the green frog, the leopard frog, and the pickerel frog, are considered as having economical bearing on the yearly distribution of our bullfrog tadpoles, and will be considered herein. By reviewing the spawning habits of the frog, it can readily be seen that before fall of the same year, the leopard and the pickerel frog tadpoles



PHOTO BY LAMAR MUMBAR

have left the pond, leaving by fall, the bullfrog and the green frog tadpoles on hand. The green frog tadpoles require one year or more before developing into the frog, and the bullfrog two years or longer.

Food of the Tadpole: Besides the natural food, provided in the ponds, the tadpoles are fed upon clabbered cow's milk and chopped sheep livers. The food is introduced during warm months in the shallow waters, along the shore lines. Feedings are made each day, of the amount that will be consumed over a period of a few hours, care being taken not to introduce sufficient tadpole food that might have a tendency to contaminate the water for the fish life. The rate of growth depends a great deal on the amount and kind of food available. In ponds, where conditions permit, heavily fed tadpoles show a remarkable growth over those less heavily fed.

Tadpoles are wonderful scavengers. They feed upon almost any kind of dead or decaying animal matter and for this reason, each spring, several hundred one-year old or older tadpoles are introduced into each one of the trout nursery ponds, where they consume any uneaten particles of food or dead fish, that might have been overlooked by the attendants. The tadpoles in these areas receive an abundance of food, and by fall, it is not uncommon to find specimens 6 inches in length. For this work we try not to introduce the tadpole in the second year of its development, because after July they develop into the frog, and in the ponds having perpendicular sides where escape is shut off, if not removed, soon drown.

Enemies: In their wild habitat, the enemies of the tadpole are many, including many kinds of birds, snakes, water insects, fish, frogs, and disease. In the hatchery ponds, the natural enemies are held more or less in check, with the possible exception of disease, which from my observations in both the hatchery ponds and the wild waters takes a tremendous toll each year. It is probably the worst enemy. The mortality, as a rule, is the greatest just before or during the period they are changing into the frog form. Tadpoles can hardly be called enemies of one another, for the reason that they will not practice cannibalism, unless confined during warm weather, in very crowded conditions without food over a period of several days. In this case they will feed upon one another. By their rasp-like mouth they remove the protective slime from one another, where disease sets in, which eventually results in death and after death the tadpoles are quickly devoured.

The Transition Period

From the time the bullfrog tadpole hatches from the egg, it requires approximately twenty-four months before it develops into the frog. By June and July of the second year, many tadpoles will already have developed the hind legs and a complete change in most instances, will take place during July and August. This change from tadpole to frog, is a delicate period of the creature's life and results in the loss of many each year. In order to comprehend more clearly, the changes that take place, when this creature changes from a form fitted to live exclusively in the water, to one fitted for life on land, we will again review just what takes place.

The hind legs first appear, budding out as small papilla on either side of the base

of the tail. As they grow they become jointed in structure and gradually take on the true shape of the foot and leg. The front limbs make their appearance in much the same manner as the hind ones. The eye becomes larger and more conspicuous, showing a slight elevation, a characteristic of the true frog. The small mouth broadens and increases in size. The tongue becomes larger. The rounded body takes on the characteristic shape of the frog. The gills are absorbed, lungs grow and take their place. The intestinal tract undergoes important changes, becoming much shorter. The ear membranes develop, color changes take place and the tail is absorbed in the body, until only a mere, black stump is left. In fact the animal is changed from a fish-like creature, living wholly within the water and breathing through gills, into a lung breathing creature, equipped with limbs for life on land. The changes undergone in the transformation, are not just in the order named, but all take place in a period of a few weeks after the hind legs appear. The tail does not drop off as is generally supposed, but is absorbed in the body, probably furnishing the creature with nourishment, during this critical stage.

The Baby Frog

My knowledge as to the habits of the baby frog is very limited, but I presume its habits are much the same as that of the adult.

In the hatchery, the rate of growth of a tadpole depends chiefly upon the amount of food and the water temperatures, and I presume this also has a great bearing on the rate of growth of the frog. No experiments have been conducted by the Board to determine the average yearly growth of either, but from comparison of the various sized frogs found upon the hatchery grounds, I am led to believe that the average yearly growth is about one inch.

That is, it would take about five years for a frog to grow a body length of five inches. As to the exact age that the frog reaches sexual maturity, I am somewhat in doubt, but probably it is about the third or fourth year.

It is the policy of the Board, whenever possible, to retain the fish at the hatcheries, until they have attained an age and size, best fitted to cope with the conditions existing in our waters of today. This policy is also applied in the distribution of tadpoles. Consequently, the great majority of them are distributed in the fall of the approach of the second year, that is when they are about sixteen months old.

By late fall, the leopard and pickerel frog tadpoles, have developed and disappeared. The remaining tadpoles, the green and bullfrog species, are then sorted into two sizes, by passing them through a series of accurately spaced parallel bars. The extreme large sizes are retained in the sorters and are considered the bullfrog tadpoles, approaching their second year. These are sent out for distribution. The smaller tadpoles of both species, having passed through the sorter are returned to the pond until the following spring, when they are again sorted, for the purpose of removing the green frog tadpoles, approaching one year old. This is easily and rapidly accomplished, for at this period the leg rudiments are present on the green frog tadpoles, which are not to be



found on the bullfrog tadpoles of the same age, the older ones having been removed the previous fall. Many of the green frog tadpoles are utilized for bass food.

Artificial Propagation

A number of years ago, at one of our hatcheries, a series of unsuccessful attempts were made to artificially propagate and rear the frog. But a number of important facts were brought out that would probably be of interest to those contemplating its culture.

Frogs of all sizes had to be securely penned to keep them from migrating to more desirable quarters.

Enemies including the snake, birds, and certain water insects, had to be guarded against. The black crow proved to be very destructive to small frogs, and in order to save them the pens were covered with wire netting.

Because of their cannibalistic tendencies, sortings had to be made and the frogs penned according to size. For the same reason, the adult had to be removed from the areas containing the tadpoles.

None of the frogs could be induced to take artificial food, and their natural foods could not be obtained in sufficient quantities for retaining a worth while number. The tadpoles fed readily on such foods as dead fish, ground sheep livers, and clabbered cow's milk.

The mortality of the tadpole at the time of transformation was very high, and many of those that did develop into the frog, crowded into the corners of the pens, where they smothered and trampled one another to death. The crowding was probably due to their efforts to escape because of the shortage of natural food.

A portion of the water area in the pens had to be of sufficient depth to protect the frogs and tadpoles from frost during the winter months.

TO ALL SUBSCRIBERS

In the event that you do not receive your **ANGLER** regularly each month, please get in touch with **PENNSYLVANIA ANGLER**, Fish Commission, Harrisburg, Pa., immediately as only a limited number of copies over the required number are available after each issue is mailed. The regular publication date for the **ANGLER** each month is set for the 15th or approximately that date, and it should reach subscribers by the 20th of the month.

FLY-FISHING FOR PERCH

The fly-fisherman who tries his luck for trout and bass does not have a monopoly on the art by any means, according to Warden Russell Womelsdorf of Kingston. Up at Harvey's Lake, Luzerne County, when the caddis fly was hatching during June the yellow perch occupied the fly-fishing limelight at the lake.

Writes Womelsdorf: "During that time hundreds of fishermen could be seen on the lake every day, many of them returning home with the limit of perch. As the water was clear, a good many amateur fishermen had a real thrill in observing the schools of large perch that came toward the shore to feed on the caddis flies. One of the nicest catches I saw this year was taken by Leonard O'Kane of Dallas, Luzerne County. His catch on June 16 numbered 25 yellow perch, averaging one pound each in weight."



Seth Says

Me and Jerry Tims was a-talkin' t'other day, and Jerry he says he ain't never knowed the boys ter be so het up about fall fishin' as they be this year. Him

and me, we do consid'able squirrel shootin', jest like most o' the fellers about these parts, an' with squirrels plenty this fall, a feller gets the itch ter be outdoors now thet shootin' time's comin'. An' I'm sayin' thet ter be out along the crick fishin' fer pike er bass jest fits right in with waitin' fer the mornin' when the guns start a-bangin'. Sorter makes fishin' and huntin' overlap an' it does a feller a heap o' good these fall days.

Jerry was tellin' me about a pike fish he took last November. He hed gone down along the crick ter get him a mess o' gray squirrels right early in the mornin'. A feller kin right often get some good squirrel shootin' in the timber along the crick. Well, sir, by an hour after sunup he hed killed his six an' was sittin' on the footlog when right below him two big pike starts a-cuttin' up high jinks with the minnies. Watchin' them pike jest sorter got his fishin' blood up, so home he traipses, takes the cane pole, gets some chubs in the run back o' his place an' is back at the crick in short order.

"By gorry, Seth," he says, "I ain't never seen sech goin's on with pike. No sooner do I plunk the whirlin' minnie inter thet hole when bang an' a 20-incher takes hold. Inside an hour, I hed five pike, more'n enough fer the folks, an' one o' them fish was 23 inches long. We hed squirrel potpie fer supper an' fish fer breakfast next day."

Reckon it's sorter bad fer farm work when Jerry an' me talks fishin'. Anyhow, the upshot o' that talk was a fishin' trip an' we ketched some right fair pike in a couple hours.

SPORTSMEN'S FRIEND DIES IN CANADA



Dr. Walsh

One of Pennsylvania's outstanding sportsmen, Dr. Richard A. Walsh, of Crafton, passed away while on a fishing trip in Canada recently. The following comments by a fellow sportsman, N. S. Boone of Crafton is a fitting memorial to Dr. Walsh, whose unselfish efforts to aid the conservation movement in Pennsylvania will be long remembered by those who knew him. Writes Mr. Boone:

"With the passing away of Dr. Walsh of Crafton, the sportsmen lost a real friend. Dr. Walsh's moving pictures of the wilds of Canada were enjoyed by many all over the state. He was the organizer of the Crafton Sportsmen's League, and many a good shot at a pheasant was the result of his raising them for the sportsmen's benefit.

"Dr. Walsh died in the backwoods of Canada—miles from a railroad while on a fishing trip. He will be remembered by many for his love of the great outdoors."

FAVORS NORTH BRANCH FOR FLY FISHING TRIPS

Ed Miller of Trucksville, Luzerne County, is known as one of the most expert fly fishermen in that section of the state, according to Warden Russell Womelsdorf. For many years he has fished the riffles, deep pools and eddies of the famous North Branch and knows it like a book. Recently he said that the Branch invariably provides thrills aplenty for him while fly fishing for bass, but that no previous catch can compare with one taken this season.

In an evening's fishing with fly and spinner during July he caught 10 smallmouth bass ranging in size from 10 to 17 inches. His creel was taken in less than two hours.

HUNLOCKS CREEK TROUT LIKE HOME-MADE LURE

Frank Raiewski of Nanticoke rates the past trout season as one of the most successful he has ever enjoyed, writes Warden Russell Womelsdorf. Confining his fishing to Hunlocks Creek, he succeeded in taking 139 trout and kept a careful check on the size of the fish. Five brown trout taken measured 13 inches apiece, 70 brownies ranged from 6 to 12 inches, 30 brook trout, 6 to 10 inches, and 34 rainbows, 6 to 10 inches. Most of the fish were caught on a nymph tied by the Nanticoke fisherman.

BOY ANGLERS SCORE

One of the finest brook trout reported taken this season was caught from Meshoppen Creek early in the season by a 10 year old boy, writes Myron Shoemaker, warden at Laceyville. Fishing near his home at Meshoppen, Andrew Carney succeeded in landing a brookie 16 inches in length, and two others eight inches.

Two boys from Laceyville, Walter Wyrgala and Lewis Cobb each succeeded in landing 25 catfish in McCloe pond during a day's fishing.

MONTGOMERY SPORTSMEN HOLD FINE OUTING

Casting fly and bait for accuracy and distance were just two of the features which delighted sportsmen who attended the annual outing of the Montgomery County Fish, Game and Forestry Association held at the farm of J. Hansell French, vice-president of the Association, near Collegeville on September 15. A varied program, including a dog show in which some of the best bench dogs in the east were exhibited, trap shooting, quoits, archery and a tug-of-war, was held. The program was arranged by a committee headed by George Bullen of Penn Square.

In the casting for distance competition, Harry Fratt won first place, George Smith, second, and Joe Ulmer, third. George Bertollette carried off first honors in the accuracy casting event. Second place in this contest was taken by Joe Ulmer with E. Smith third.

One of the features of the day was the dog show. First place in the English setter competition was taken by the setter owned by Frank Wildman; in the Irish setter class, a dog owned by Dr. D. M. Miller of Collegeville captured first place, while the beagle first honor was carried away by a dog owned by S. H. Kuhns of Telford. Breaking 23 out of a possible 25 birds, E. Smith won first place in the trap shooting events.

Over 150 members of the Association and their guests attended the outing which was climaxed by a picnic supper in the shady oak grove on the Hansell property.

Trolling for wall-eyed pike or Susquehanna salmon is great sport. When a school of the fish have been located, circle about the spot in the boat. Generally, when the lure comes over the point of the first catch, a strike will be forthcoming.

SWIMMING BLIND

Watersnakes often cut up queer capers, but that reported recently by Warden Myron Shoemaker of Laceyville just about takes the cake. To remove any doubt that it occurred, Myron refers you to George James, warden at Carlisle, who was accompanying him at the time.

According to Shoemaker, he and James were at Spring Lake, Bradford County, when they noticed a water-snake swimming toward shore, with a seven inch largemouth bass clamped in its jaws. As the snake apparently paid no attention to the two men, they experienced little difficulty in killing it. Closer examination revealed that the entire upper jaw of the snake and the upper part of its head including the eyes was covered by the mouth of the bass. Reptile and fish, in other words, were interlocked, for the lower jaw of the bass was in the mouth of the snake.

Now the thing puzzling the witnesses to the unusual incident is this: Was the snake attempting to kill the bass or vice versa. At any rate, the bass came out on top for when it was released it swam away apparently unharmed.



MEMBERS OF THE HAZLETON CHAPTER, IZAAK WALTON LEAGUE, CARRIED THROUGH A UNIQUE TROUT STOCKING TOUR OF INACCESSIBLE SECTIONS OF THE LEHIGH RIVER THIS SUMMER BY MEANS OF SPECIALLY BUILT BOATS. SHOWN IN THE GROUP OF SPORTSMEN, LEFT TO RIGHT, ARE SETH BROWN, FRED NONSTIEL, WALLACE WOODRING, HENRY ALT-MILLER, ED BUSH, CARL JENKINS, AND PETE STEGNER.

BASS, CATFISH, SUNFISH AND TROUT STOCKED IN STREAMS DURING AUGUST

August distribution from the Fish Commission's hatcheries was featured by black bass, trout, brook and brown, yellow perch, sunfish and catfish. The total number of fish released was 199,198. Fingerling bass released numbered 83,700, fingerling catfish, 41,222, fingerling sunfish, 37,300, fingerling yellow perch, 7,300, brook trout fingerlings, 3,200, brook trout, 8 to 11 inches, 2,476, and brown trout averaging 8 inches in length, 24,000.

The following waters in the various counties were stocked:

Adams—black bass, Conewago Creek; catfish, Conewago Creek; sunfish, Conewago Creek.

Armstrong—black bass, Buffalo Creek; catfish, Buffalo Creek; sunfish, Buffalo Creek.

Beaver—black bass, Beaver River; sunfish, Beaver River.

Cameron—trout, Driftwood Branch of Sinnemahoning Creek, May Hollow, Ingler Run.

Carbon—trout, Pohopoco Creek.

Centre—trout, Spring Creek, Poe Creek, Laurel Run.

Chester—trout, White Clay Creek.

Clearfield—trout, Laurel Run.

Clinton—trout, Antis Creek.

Crawford—black bass, Pymatuning Reservoir, Oil Creek, Conneaut Lake; catfish, Pymatuning Reservoir, Conneaut Lake; sunfish, Oil Creek.

Cumberland—black bass, Carlisle Water House Dam on Conodoguinet Creek, Susquehanna River; sunfish, Carlisle Water House Dam on Conodoguinet Creek; yellow perch, Susquehanna River; trout, Mountain Creek, Letort Spring Run, Yellow Breeches Creek.

Dauphin—black bass, Susquehanna River, Swatara Creek; catfish, Conewago Creek, Swatara Creek; yellow perch, Swatara Creek, Conewago Creek, Susquehanna River.

Delaware—black bass, Chester Creek; catfish, Chester Creek; sunfish, Chester Creek.

Elk—trout, West Clarion Creek, Boggy Run.

Huntingdon—black bass, Penn Central Dam on Frankstown Branch of Juniata River; catfish, Penn Central Dam on Frankstown Branch Juniata River; yellow perch, Penn Central Dam on Frankstown Branch Juniata River.

Indiana—black bass, Little Mahoning Creek; catfish, Little Mahoning Creek; sunfish, Little Mahoning Creek.

Jefferson—trout, North Fork Red Bank Creek, Mill Creek.

Lackawanna—trout, Lehigh River.

Lancaster—black bass, Conowingo Dam on Susquehanna River; Safe Harbor Dam, Conestoga Creek, Chickies Creek, Middle Creek; catfish, Conowingo Dam on Susquehanna River, Safe Harbor Dam, Conestoga Creek, Chickies Creek, Middle Creek; sunfish, Conowingo Dam on Susquehanna River, Safe Harbor Dam, Conestoga Creek, Middle Creek, Chickies Creek.

Lawrence—black bass, North Fork of Little Beaver River; sunfish, North Fork of Little Beaver River.

Lehigh—trout, Little Lehigh River.

Luzerne—black bass, Harveys Lake; sunfish, Harveys Lake; trout, Lehigh River.

Lycoming—trout, Larrys Creek, Lycoming Creek.

Mercer—black bass, Neshannock Creek, Sandy Creek; catfish, Neshannock Creek, Sandy Creek; yellow perch, Neshannock Creek, Sandy Creek.

Mifflin—trout, Penns Creek.

Northampton—trout, Bushkill Creek.

Perry—black bass, Shermans Creek; catfish, Shermans Creek; sunfish, Shermans Creek.

Pike—trout, Lackawaxen River, East Branch Wallenpaupack Creek, Wallenpaupack Creek, Raymondskill Creek.

Potter—trout, Pine Creek.

Snyder—black bass, Penna. Power and Light Dam on Middle Creek; catfish, Penna. Power and Light Dam on Middle Creek; sunfish, Penna. Power and Light Dam on Middle Creek.

Sullivan—trout, Loyalsock Creek.

Susquehanna—trout, Harmony Creek.

Union—trout, Rapid Run, White Deer Creek.

Venango—black bass, Sandy Creek; sunfish, Sandy Creek.

Wayne—trout, Dyberry Creek, Butternut Creek, West Branch Wallenpaupack Creek.

NATIVE TROUT FLIES

(Continued from page 7)

the water bulge and churn as the trout curves sharply downwards.

Then is the angler in his element! Hastily scooping up a few flies from the water, he selects and ties on his leader an artificial which closely resembles one of the natural insects. In a fever of anticipation he begins casting; the line shoots forward,—the fly hovers a brief second over the water, then flutters gently down on the surface. Meanwhile, indifferent to this newly arrived insect that floats so temptingly over the water, the trout continue their feeding orgy, leaping all around in a tantalizing and aggravating display of reckless abandon. Among all these various colored insects and leaping fish, it is no easy matter, to determine just the exact fly upon which the trout are feeding. Then various wet flies, dry flies, hackles, nymphs, bi-visibles and fan-wings, temptingly display their charms but all are contemptuously ignored by the rising fish.

The angler must hurry, for the shadows of night are rapidly closing in; already the white birches have lost their sharpness and seem merging with the mountains in the prevailing gloom. Somewhere back in the hills, the sharp yap-yap of a fox comes with startling clearness through the still night air; and near at hand, a whip-poor-will lets loose its shrill staccato whistle, which is taken up and repeated by another, farther downstream.

The trout are still rising, but not with the enthusiasm of a short time before. Already the hatch is dying out! Something must be done soon! Finally in sheer desperation, the angler again scoops up a few more flies off the water. Ah! A tiny black gnat, which hadn't been seen before, and whose swarm was probably skimming over the water, near the head of the pool.

Hastily the artificial is tied to the leader. No sooner has the fly alighted on the water when there appears a swirl, the fly disappears, and a vicious tug races back along the rod to gladden the heart of the fisherman. At last the right fly is secured, and the few straggling trout, still half-heartedly feeding, are quickly caught and crealed.

There are times like the above, when the trout are very selective and will take only one fly, disregarding all others; then again I have seen times when almost any fly, regardless of shape and color, was eagerly seized by the fish, so long as it was presented in a natural and tempting manner. In general though, my experience has been that it is best to try to imitate the natural insect and then present it, in a natural way, to the trout, a fish whose chief charm—probably lies in its varying moods—moods, that demand incessant change, a demand born of a life of changes owing to the ever varying seasons and gradations of insect life. Trout are fickle and temperamental and disappointments and joys mix alternately for the angler who lures them with a fly.



WATER BOILING CONTEST AT ANNUAL PICNIC OF PENNSYLVANIA STATE FISH AND GAME PROTECTIVE ASSOCIATION, VALLEY FORGE

FOUND OUT TOO LATE

Warden R. C. Bailey of Youngsville, Warren county, tells a good one on a trout fisherman he met in June while patrolling Killwell Creek. He writes:

"I was patrolling Killwell Creek when I met an angler from Centerville. In answer to my 'How're they bitin'?' he informed me that he had taken no trout but two bass eight or nine inches long that he had returned to the stream. My curiosity was aroused for I had never before heard of bass being taken from the Killwell, but he insisted just the same that he had caught two.

"Later I succeeded in taking a 10½ inch brown trout, and when I returned to the car found the angler from Centerville still there. When I showed him the trout, he examined it carefully and finally asked dubiously 'Say mister, are you sure that's a trout?' Sure, of course, I told him, whereupon he said with much fervour: 'Blankety-blank, I put two of 'em back thinkin' they was bass.'"

A pair of old shoes is first rate equipment for wading while fishing bass waters in hot weather.

FISHING FOR OWLS

While attempting to cast a bass "plug" in an open space in reed patches under overhanging hemlocks along the shore line of a lake in Susquehanna County, County Game Protector Anderson and a friend had the unique experience of having a great horned owl swoop down and seize the lure. Taking out all available line, the bird broke it and escaped.

THIS PLUG WORKED

Recently a fisherman caught a six-pound bass on a plug, and took it to the local sporting goods store for exhibit, with the hook still in its mouth. Presently a dog grabbed the fish and started to run off with it. Another hook on the plug caught in the dog's mouth, and when the fisherman tried to rescue the fish from the dog, in the melee another hook on the plug caught in his leg, in turn, so that the bass, the dog and the fisherman were all fast to the same plug. Meantime a small boy had "appropriated" the fish and started home with it.

Courtesy Hunter, Trader, Trapper.

CARP FISHERMAN

The knack of effective carp fishing is not confined to older members of the fishing fraternity by any means, according to Warden Link Lender of Bellwood. There's John McMahan of Alexandria, for instance. Just 15 years old, John has caught 45 carp to date this year, the largest weighing 19¾ pounds.

Other good catches from the Juniata and the Raystown Branch of the Juniata have been reported. Fishing in the Raystown Branch near what is known as James Creek bridge, C. E. Sipes of Martinsburg caught three fine bass and a wall-eyed pike or Susquehanna salmon. The bass measured 12, 15 and 20 inches respectively, while the pike measured 23 inches.

Trying his luck in the Juniata, Charles Delaheny of Mt. Union caught a whopper of a wall-eyed pike. His catch measured 27½ inches in length and weighed 8¾ pounds.

Boy anglers are getting their share of the bass this summer. Recently Jim Smith, 15 years old, of Towanda, caught a four-pound largemouth bass while fishing in Lake Wesauking, Bradford County. A plug lured the big fellow to strike.



TROUT EGGS ON TRAY AT PLEASANT MOUNT HATCHERY

SEES WATERSNAKE CATCHING FISH

Julian Karnoski, Ashland, R. D. 1, is a firm advocate of thinning down the number of watersnakes in Pennsylvania streams. Recently, he writes, he had an opportunity to watch one of the reptiles catching young trout and whitefish (fall fish) in a small mountain stream. His curiosity was aroused when the snake, after taking a trout, apparently had only started fishing. Hanging from a bush over the water, it succeeded in taking three trout and one fall fish before it was shot. Repeatedly, he said, he has killed as many as fourteen watersnakes with a rifle on this stream and not moved from one spot.

PICKEREL CATCH

Fishing in Kephart Dam, Centre County, Harry Mattern, of Phillipsburg, recently made an unusually fine catch of pickerel. The fish, nine in number, ranged in length from 16 to 23 inches, according to Special Warden David Dahlgren.

BIG PIKE

Writes George Zimmerman, secretary of the Lehigh County Fish and Game Protective Association: "Sam Caskie claims credit for having caught the largest fish landed by a resident of Slatington this season. His prize catch is a wall-eyed pike taken from Lake Wallenpaupack. It measured 27 inches in length and weighed 7 pounds. Assisting him in hauling the fish aboard was Pat Berlin. They also caught a number of black bass."

SCORES ON BASS

Mrs. J. Ralph McCoy, wife of Game Protector J. Ralph McCoy, Lewistown, recently caught two fine smallmouth bass in the Juniata River near Lewistown. One of the bass measured 18 inches in length and the other 14 inches.

TO CLUB SECRETARIES

Frequently at meetings of sportsmen's organizations suggestions for legislation pertaining to fish are advanced by members. The Fish Commission will appreciate greatly any reports from secretaries on legislative topics introduced at club meetings.

PRESENT SHOW FOR SNAKE DRIVE

So outstanding was the success of the Salisbury-Meyersdale Sportsmen's Association drive to rid streams of Somerset County of watersnakes that over 3000 of the reptiles were killed and presented for the bounty offered by the Association. In order to defray the expenses of the campaign, and to lay the groundwork for future drives, the Association sponsored a show presented at Reich's Auditorium in Meyersdale on September 12 and 13.

Featured in the show, "Captain Racket," was Mercedes Darrah who was recently selected as "Miss Somerset County."

"SUPER-ROCK BASS"

That gamey fish, the rock bass has, it seems, not received quite all of the attention it deserves from followers of Izaak Walton. In order that the situation may be in part remedied, the following report of a catch of rock bass from the North Branch should compensate to some extent. Generally, a nine inch rock bass is a fish of such hefty girth that it attracts considerable comment. Myron Shoemaker, however, comes along with a report that puts all nine-inch "rockies" in the shade.

Fishing at Black Walnut recently, Barney Jablonski and Leo Naverro of Nanticoke caught fourteen big rock bass. And believe it or not, these fish measured from 11 to 13 inches in length.

BIG PERCH

Perch are generally considered pond or lake fish, but one of the largest fish of that species reported this season was taken in the Allegheny River, a report received from Warden J. H. Hall indicates. The big perch, 18 inches long, was caught by Roy Williams of Mapleshade.

Catches of game fish on the Allegheny have been exceptional this year. A five pound smallmouth bass measuring 21 inches in length was taken by Peter Stubler, 12 years old, at Henrysbend. From President Eddy, Ed Shamming of Seneca, caught 10 bass, ranging in length from 10 to 18 inches. A wall-eyed pike, 26 inches long and weighing 6½ pounds was caught at the Alcorn Island eddy by Cliff Maul of Oil City.

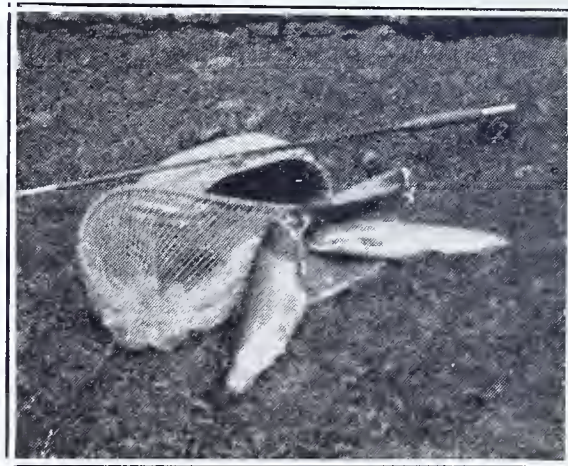
LADY CHAMP

A recent report indicates that Mrs. Burdwell Yenser of Slatington has qualified as champion woman angler for that borough. Recently she caught two big pickerel in Peck's Pond, one measuring 25 inches in length and weighing 3½ pounds, the other 24 inches and weighing 3 pounds. Minnows were used as bait.

JUNIATA CATCHES

The Juniata River has been furnishing some excellent bass fishing this year according to a report received from Special Warden Bill Keebaugh. Fred Seitz of Altoona recently caught 10 bass and one wall-eyed pike during a day's fishing. The bass ranged in length from 10 to 15 inches, while the pike measured 22 inches. Ed. Hudson made a catch of eight bass, 10 to 14 inches in length, during August.

Fishermen in Butler County rank Oneida Dam as one of the favorite bass fishing grounds in northwestern Pennsylvania. And that there is just reason for this is indicated by the number of reports of big bass that have been taken consistently from its waters this season. Now Special Warden J. H. Bergman, of Butler, comes along with a report of two fine largemouths taken recently by Doc Campbell, of Wilkinsburg. Each of the fish measured 18½ inches in length and they had a combined weight of 6½ pounds. Twenty-five catfish were taken during a day's fishing on Conoquenessing Creek by Donald Dunrauf, of Pittsburgh.



CARL MILLER, BLOOMSBURG, CAUGHT THESE BROWN TROUT IN BIG BUSHKILL CREEK. LENGTH, 19 AND 18 INCHES RESPECTIVELY

SEES WATERSNAKE CAPTURE TROUT

G. M. McDonald, Reynoldsville attorney, tells of an unusual incident relative to the capture of fish by their arch enemy, the watersnake. He writes:

"Paul L. Swanson's article on watersnakes in your recent issue is most interesting, and especially so because of species (horned) of the fish swallowed by the snake. It reminded me of an experience some cronies and I had several years ago while fishing on Young Woman's Creek. We were traveling down stream preparatory to fishing back up, and at a point where the stream made a turn and crossed the path or road, there was a deep hole in which we noticed a disturbance on the bottom. Looking more closely we saw trout scooting here and there and presently a flash and then another like the lower side of a trout turning upwards. In a few seconds we saw a watersnake swimming towards the gravel bar on the opposite side of the stream, holding a trout in its mouth upwards. We waited until it came out on the beach when we killed the snake, which was three feet long and caught the trout which measured nine inches.

"No doubt many fishermen have watched watersnakes coil on the bottom of streams and strike out at fish as they swam by, as I have done many times."

Catches Crow on Hook and Line

Fred Worman of Danville, Montour County, now has joined that exclusive club of fishermen that make unusual catches ranging from chickens to weasels. And to qualify, writes Warden Charles Litwhiler, of Catawissa, Fred caught a fine specimen of that general nuisance, the crow.

When he made his catch, he was fishing near the mouth of Mahoning Creek. Finally, after the fish had demonstrated a distinct unwillingness to accommodate his angling efforts, he drew in his line, left the hook lying baited on the ground and walked to a road stand a short distance away for refreshment.

Returning to the stream, he was amazed to see a crow frantically hopping about. It had swallowed bait and hook. After killing the crow, Fred extracted the hook and resumed his fishing.

CYCLES OF LIFE IN ARTIFICIAL WATERS

Artificially created ponds go through two cycles insofar as fish food organisms are concerned. First and of major importance is the fact that the amount of fish to be found in any water area is dependent principally upon the amount of food available. Where fish food is scarce fish are scarce, and where fish food is plentiful good fishing may always be anticipated. Second, it must be remembered that fish food is dependent upon the amount of organic matter in and about the pond or lake. By organic matter, we mean anything living or decaying that belongs to the plant world such as aquatic grasses, leaves from trees, silt and lighter



GAME FISH COLLECTION OF WILLIAM BURK, PHILADELPHIA ANGLER AND MEMBER, BOARD OF DIRECTORS, PENNSYLVANIA FEDERATION OF SPORTSMEN

soils that are washed into the water, branches, and stumps of trees.

When large, newly-created ponds such as Lake Wallenpaupack, and Pymatuning Reservoir are first flooded with water, the pond bottom consists of a heavy mat of decaying organic matter. This throws forth a very rich crop of fish food that enables the Fish Commission to produce astonishing results from the fish planted and to give the anglers good fishing in a comparatively brief time. It is due primarily to abundance of food and second to the lack of keen competition for existence among the various species of fish as the majority of them are of different sizes owing to their development, over a period of several years.

As time advances, the artificial pond makes a complete turnover in its earlier stage when it was being supported entirely by terrestrial forms of organic substances. As this decays the purely aquatic forms disappear and others come on and take their place. When this turnover is taking place, or in other words at the time when the terrestrial organic substances have practically disappeared or lost their value as a fish food and while the aquatic plants are gaining a foothold, the lake is liable to show a decline in fishing. However, as the purely aquatic vegetable matter gains a foothold and stabilizes

conditions fishing again increases and is not subject to another decline unless some unforeseen condition arises.

DISEASE IN FISH

Fish, like higher forms of animal life, are subject to disease, one of the most common fish diseases being fungus. A white, hairy growth attacks the fish on the part of the body where the slime has been removed. This gradually spreads over the body of the fish, generally causing its death. One way of removing the vital slime is to touch the fish with a dry object. For this reason, before returning a fish to the water, the hands should be wet.

Brook trout reach sexual maturity at 22 months, and produce from 400 to 2000 eggs, depending upon age and size. The young trout subsist upon the umbilical sac from 15 to 40 days, depending upon the water temperature. Their growth depends upon available food and water temperature. Under hatchery conditions they attain an average length of eight inches in two years.

There are at least twenty-nine different families of fish represented in Pennsylvania and approximately 135 species.

BOARD OF FISH COMMISSIONERS HARRISBURG, PA.

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HERE ^A_ND THERE IN ANGLERDOM



CLAIR KING, SID OWENS AND BILL PAULY, OF APOLLO, DISPLAY PART OF THEIR CATCH OF SMALLMOUTH BASS FROM THE ALLEGHENY

Five bullhead catfish, 12 to 16 inches in length were landed by Walter Jakorka and Lewis Caspar, of Scranton, in Kenney's Pond near Waymart recently.

They've been catching some nice bass on the Raystown Branch of the Juniata, according to Special Warden Harry Moore. F. E. Zimmerman, of Hooverville, landed a bass 16½ inches in length and weighing 2¾ pounds at Mann's Choice on the Branch in Bedford County. A 19½-inch bass weighing 3¼ pounds was caught by Edgar Plack, of Johnstown, in Dunnings Creek, Bedford County. S. C. Hulse, of Bedford, who is keenly interested in the study of bird life recently reported seeing a great blue heron and a white egret at Kenton's Bridge on the Raystown Branch. A largemouth bass measuring 18 inches and weighing 3½ pounds was caught on the Branch near Hopewell by G. R. Koontz, of Hopewell.

S. A. "Pete" Hoffman, formerly at the registration booth at the Spring Creek Project, has accepted a position in the Sporting Goods Department of a Philadelphia firm.

Bass fishing has shown decided improvement in virtually all bass streams of the state with the coming of cooler weather. Even greater improvement in fishing for the big fellows is expected now that October's chill nights and mornings are here.

One of the main topics of fishermen in Luzerne County this season has been the remarkable fishing on Lake Wallenpaupack, according to Warden Russ Womelsdorf, of Kingston. Wall-eyed pike have been a keynote in the discussion, for without doubt, the fishing for this species on the lake during the present season has been without parallel in Pennsylvania angling annals. "Hundreds of fishermen from here," writes Womelsdorf, "have been journeying to the lake to fish for wall-eyes and the majority have been returning with full creels. Many of them have their full quota, and six and seven pounders are not at all unusual."

The North Branch of the Susquehanna, too, is more than holding its own as a favorite fishing water, according to Warden Myron Shoemaker, of Laceyville. One catch reported by C. H. Heinie, of Girardville, consisted of a 19-inch smallmouth bass, a 26-inch pickerel and a 20-inch wall-eyed pike. On the same day that this catch was reported, August 30th, B. I. Smith, of Wyalusing, caught a 19-inch smallmouth bass on a fly. Bill Foster, of Laceyville, caught three bass in a few minutes on fly and spinner. One of the fish was 16½ inches in length.

Game Protector Tom Mosier and Mrs. Mosier, of Bellefonte, and Game Protector Miles Reeder and Mrs. Reeder, of Mifflinburg, made some nice catches of bass at Wysox on the Branch. Mrs. Mosier caught the largest fish, a three pound smallmouth bass.

TWELVE BASS, 189 INCHES

Speaking of a real average in the size of bass taken this year, we urge you to consider the following report by George Zimmerman, secretary of the Lehigh County Fish and Game Protective Association. George informs the ANGLER that Elwood Adams of Allentown has taken so far this season 12 bass, largemouth and smallmouth, from Naomi Pines Lake, and that these bass had a total length of 189 inches. On an average, the fish measured 15¾ inches apiece; the smallest was 12 inches in length, and the largest 21½ inches. The catches were made on plug bait.



EDWIN ROTHERMEL, OF MINERSVILLE, WITH 20-INCH BROWN TROUT TAKEN IN FISHING CREEK, AT SUEDBURG

A very important game fish is the pickerel on ponds and lakes of Wayne County in northeastern Pennsylvania. Warden LeRoy Noll reports some excellent pickerel catches. Fishing at Adams Lake, Dan Kulick, of Nesquehoning, caught five pickerel ranging in size from 15 to 19 inches. Dorothy Sargent, of Wilkinsburg, caught a 19-inch pickerel in Lake Ladore near Waymart. A 21-inch pickerel was taken on a number 2 spinner at Lake Ladore by Andrew Wladyka, of Mayfield.

Fishing at Wysox on the Branch last month, Gene Means, of Towanda, succeeded in taking a fine 19-inch smallmouth bass.

A 19-inch smallmouth bass was taken by J. M. Koval, of Wyoming, Pa., on fly in the North Branch near Laceyville. Four other bass were also landed on this occasion by Koval.



An Aerial View of a Section of the Trout-Raising Project
Located at Spring Creek, Centre County

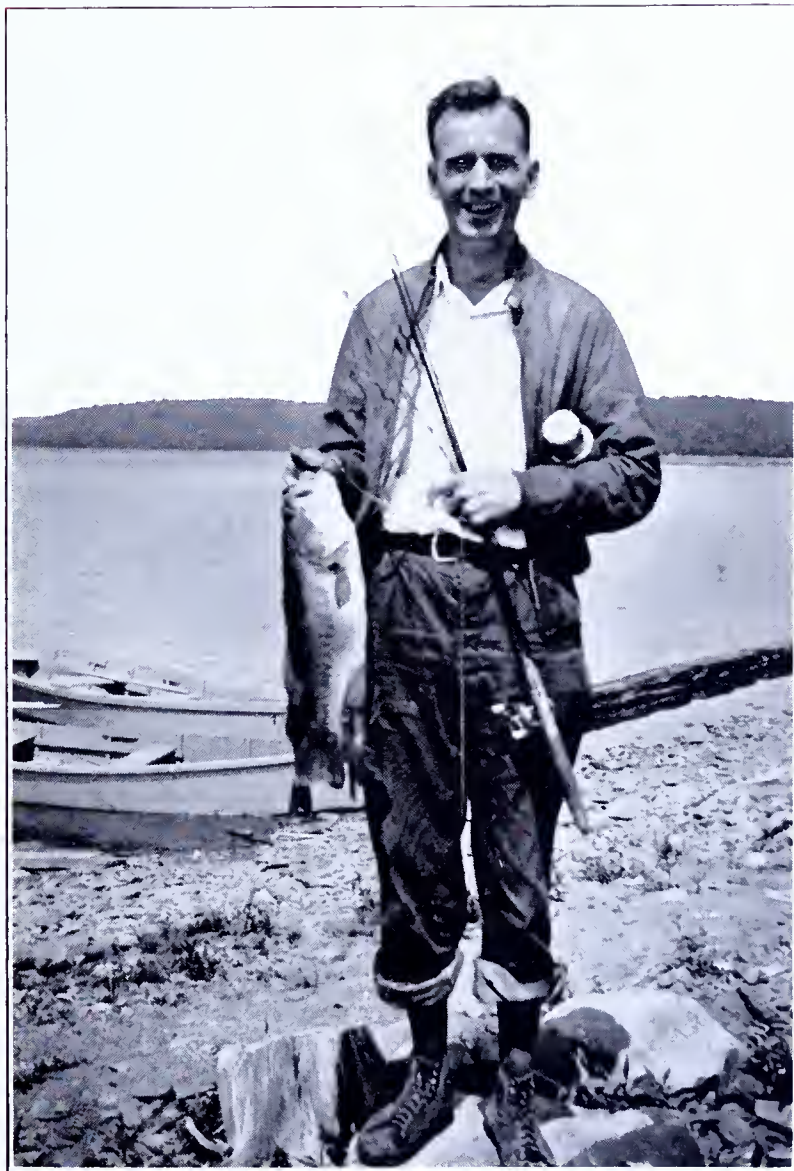


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PENNSYLVANIA ANGLER



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EDITORIAL

Balanced Stocking

It is a constant source of gratification to the Fish Commission that here in Pennsylvania we are carrying through an intensive stocking program, carefully balanced, and taking into consideration every class of fisherman in the Commonwealth. The boy who likes to fish for catfish and sunfish, the trout fisherman who finds his sport on swift mountain and meadow streams, and the bass fisherman who derives greatest satisfaction in fishing for these fine game fish—all are considered under our present system of balanced stocking. But what is balanced stocking? What will it mean to the future of fishing in Pennsylvania?

Briefly, balanced stocking means distribution of game fish, black bass, wall-eyed pike or pike perch, brook trout, brown trout and rainbow trout, stocking the less voracious species, bluegill sunfish, yellow perch and bullhead catfish, and minnows, which serve as food for game species. To stock black bass, for instance, in a body of water having little available forage might be compared to releasing a herd of cattle to graze in a plowed field. Sufficient forage is a first requisite to successful fish stocking.

Minnows released from the hatcheries each year serve to replenish waters in which the number of forage fishes has been reduced either by rapid increase in the number of game fish present or by heavy fishing for bait purposes. Just so long as the minnow population of a stream or lake is sufficient to meet the demands upon it by foraging bass and other game fish will it continue to show best results as a game fish area. When the minnows become scarce, bass, pickerel or pike-perch do not hesitate to devour their own kind, which obviously means a serious decrease in number of game species. I feel that our minnow stocking is an outstanding factor in bettering Pennsylvania fishing.

From the angle of balance, the stocking of catfish and sunfish is equally important. Aside from the increased food these species afford game fish through their young, they are definite assets to any stream, lake or pond. They might generally be classed as non-competitors for game fish forage. While a large sunfish frequently will devour minnows, and the same principle applies to catfish if an opportunity is presented, the bulk of their food is obtained from crustaceans, insect life or animal life that may be washed into the water. The catfish, a bottom feeder, derives a great part of its food from matter that would otherwise be wasted.

In our stocking of game fish, the comprehensive stream survey completed two years ago has been invaluable. With this survey as a chart, we are able to tell in an instant just how large a body

of water is, what kinds of fish it is best adapted for, and what forms of aquatic life are available as forage for the various species. Bass stocking under our present plan is being conducted on larger waters offering wide range and abundant food possibilities. If a small pond or lake is now furnishing good fishing for sunfish and catfish, it is not stocked with bass.

In Pennsylvania today we have a great army of fishermen who enjoy fishing for suckers; thousands find sport in fishing for catfish and sunfish, while there are also many sportsmen who fish for trout and bass. Only by balanced stocking, the planting of these different varieties of fish, may adequate fishing be provided for our anglers. Variety in fishing is, I feel, a worthwhile objective to be attained, and our hatcheries today are being maintained at a production peak to bring it about.

Under present day conditions, with an evergrowing army of fishermen on all available fishing waters, we must put forth every effort to bring these streams, lakes and ponds to their maximum capacity for fish production. By preserving the balance of nature through diversified stocking, we have taken a real forward stride in the drive for better fishing.



Commissioner of Fisheries.



YOUNG SMALLMOUTH BASS

Milady Goes A-Fishing

SCENE—A Pennsylvania trout stream.
TIME—Early morning of a day in May,
1935.

THE family coupe has just jolted to a stop in a small clearing at the side of the stream. Husband and wife clamber out, and in an instant are busily engaged assembling tackle. An early morning hatch of flies appears on the water. Near the head of the pool a big brook trout rises to open formally the morning feeding.

HUSBAND: See that? Now, if it doesn't take you an hour to get ready you should hook a fish like that this morning. Say, where's my fly-box?

WIFE: Now, John, it's right back of the seat beside the new one I got yesterday. And besides, you'll find another tapered leader I put to soak with mine in the leader box before we started this morning.

HUSBAND: You what? Say, who told you about fly boxes and soaking leaders: And I'll bet if you bought a collection of flies they're humdingers, just about everything a trout wouldn't look at. But hurry up, this rise won't last all day.

WIFE: There (as she deftly and in approved fashion fastens tapered line to leader.)

HUSBAND: (In growing perplexity) Why, by George, you're ready as soon as I am.

WIFE: Not ready yet. I must grease this line and leader and use a little fly oil on this Ginger Quill to make it float right.

HUSBAND: (By this time completely flabbergasted) Well, I'll be doggoned. Now listen, I bring you along for a day's outing and you start talking and acting like a veteran fly fisherman. Just when I'm expecting you to start raving about some bright

colored creation that would upset every trout in this stream, you pick one of our most effective flies to start fishing with. I ask you, when, where and how in thunder did you scrape up so much dope on fly fishing?

WIFE: Well, you know, while you were at the office this winter I read up on fly fishing and when I bought this nice little four ounce rod I practised casting according to instructions. But, dear me, we're wasting too much time talking. The trout will stop rising and then, where will we be? Which way do you want to fish, dear? Upstream. All rightie. I'll meet you at the car about ten o'clock. They say it's not much use fishing fly in the middle of the day. Good luck.

And, believe it or not, that dialogue will be enacted on more than one of our Keystone State trout waters when the 1935 season is under way. For Milady has served notice, in no uncertain terms, that she has entered the fishing limelight in a big way. No longer is the male the only competitor for honors in the sport made immortal by Izaak Walton. Here is a form of outdoor recreation ideal for women. Fly fishing, in particular, is an art and appeals strongly to sportswomen. It eliminates all the fuss and bother coincident with fishing live bait. The delicate fly rod, tapered line and leader, and tiny feathered lures, dry flies or wet, lend this form of angling features of fine balance and lightness not attainable in other methods of fishing.

It is not to be assumed, however, that Milady confines her fishing activities to use of the dry or wet fly. Many women are expert at live bait fishing, and experience few



MISS MAZLI DEIBLER, DAUGHTER
OF COMMISSIONER DEIBLER,
LIKES FLY FISHING

if any qualms at impaling a wriggling red worm on a hook or hooking a minnow, helgramite or stone catfish. Others are becoming adept at bait casting and casting fly and spinner or floating lures for bass.

And do they acquire the fine points of fly fishing rapidly? Let us consider the opinion of Edgar W. Davis, veteran fish warden and fly fisherman, who was in charge of the women's fishing section at the Spring Creek project. During the trout season at Spring Creek, Davis instructed hundreds of women in fly casting.

"I not only find them eager to learn something about fly fishing," he declares, "but unusually quick to pick up the fine points of placing a fly properly. After instruction of possibly an hour, some of our feminine students were casting a fly remarkably well. They are keen observers and in many instances mastered the fundamentals of the sport in short order. From personal observation, I would say that women are coming to the front in the modern fishing picture."

The feminine attitude concerning fishing is very ably expressed by Mrs. Edgar W. Nicholson, of Philadelphia. She has accompanied her husband, Edgar W. Nicholson, Member of the Board, on many fishing trips and is enthusiastic over the possibilities of angling as a sport for women. Says Mrs. Nicholson:

"Indeed there should be more fisherwomen. It's a perfect sport for them. I think they should make especially good trout anglers. Fishing takes its followers to the most beautiful places of the world, and is the



EDGAR DAVIS INSTRUCTS MRS. CALVIN BERLIN AT
SPRING CREEK

ideal sport for the true nature lover. Studying the wild flowers, birds and animals is not the least of its attractions for me."

"Women Only"

Two Pennsylvania trout streams have been designated for the fishing of "Women Only." One, Prather Run, located near Endeavor, Forest county, was reserved exclusively for Milady three years ago by Mrs. Alexander Wheeler, wife of State Representative Wheeler. Signs placed along this stream make it a "no man's land" in the following terms: THIS STREAM HAS BEEN SET ASIDE EXCLUSIVELY FOR THE BENEFIT OF THE WOMEN TROUT FISHERS OF PENNSYLVANIA.

Shortly before the opening of the trout season last year, Mrs. E. Kent Kane reserved Fuller Brook, located near Kushequa, McKean county, for the exclusive use of women anglers. One of the most open and easily accessible streams in the district, Fuller Brook is three miles long. It rises in springs near the road between Mt. Alton and Kushequa and flows into Kinzua Creek about one mile east of Kushequa. Just to make the "Women Only" restriction more binding, any feminine anglers fishing Fuller Brook were requested to report license numbers of men fishing the stream.

Prather Run and Fuller Brook are being stocked with legal size trout by the Fish Commission and these two novel projects have already aroused keen interest on the part of feminine disciples of Izaak Walton living in that section of the state.



FEMININE MEMBERS OF THE HOLMBURG FAMILY, COUPON, PA., ENJOYED THE FISHING AT SPRING CREEK AS KEENLY AS DID THE MEN

Fishing Togs

On the word of an ardent feminine Wal-tonian, Milady is turning away from the cumbersome skirt and other typical feminine wearing apparel and favoring togs more practical for use in the out-of-doors. In brief, laced knee breeches, hip boots, a khaki shirt and beret or plain felt hat are rapidly gaining favor. In midsummer bass fishing, a pair of bathing slippers or shoes and shorts are not without their exponents.

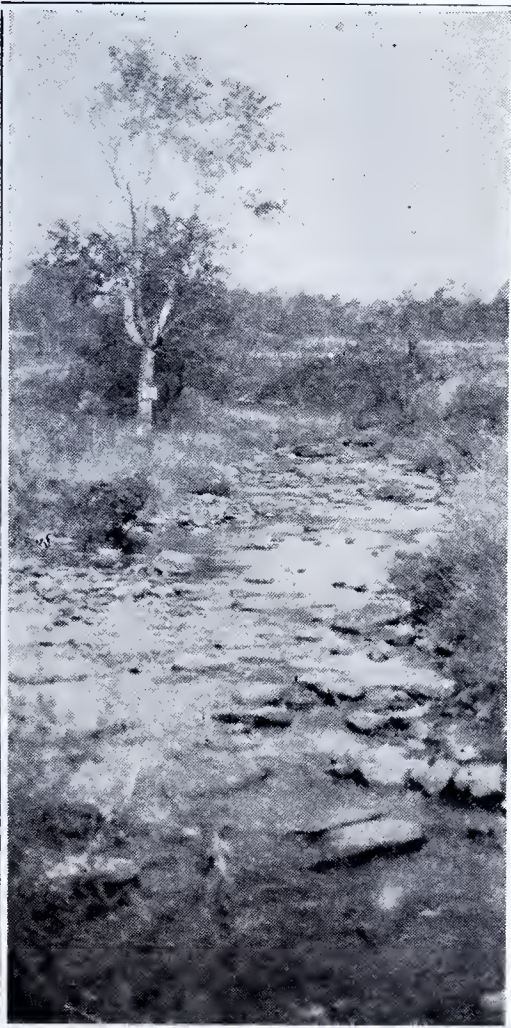
The growing interest of women in conservation is demonstrated in a number of ways. Pennsylvania now has a woman who is a Special Warden, Mrs. Sarah Alice Himes of Brookville, Jefferson county. There is one active ladies rod and gun club, the Martha Washington Auxiliary of the Bona-vista Rod and Gun Club, affiliated with the Carbon County Sportsmen's Association. Mrs. W. E. Kresge, as president of the Auxiliary, and Mrs. Pearl Kocher, secretary, attended the meeting of the State Federation of Sportsmen held in Harrisburg last winter.

It would be interesting to know just what species of fish is most popular with feminine anglers. While brook trout and brown trout, and the fine light equipment that is used in taking them on a fly, have strong appeal, many women find real sport in fishing for bluegill sunfish, yellow perch and other pan-fish. So general is the distribution of these popular species and so readily do they take live bait and artificial lures, that Milady finds abundant opportunity to fish for them. In its program of balanced stocking, the Fish Commission has emphasized the planting of sunfish, perch, and catfish, and these species are today abundant in many streams and ponds easily accessible to women anglers.

With the constant increase in angling interest, evinced by Milady in Pennsylvania during recent years, every encouragement of this fine sport for women is being given. Without doubt, the woman's fishing section at the Spring Creek stream improvement

and trout raising project has been an incentive to greater interest in angling. Many women who had never cast a line, and probably entertained an idea that fishing was a pursuit monopolized by man and difficult to acquire, were enthusiastic converts to the pastime after several hours at Spring Creek.

From present indications, it would seem that the wife who takes a book along to read while her husband fishes will become increasingly rare in the not distant future. A growing tendency evident in Pennsylvania today is to follow outdoor sports. Probably in no other way may such fine companionship between man and woman be attained as that afforded by a day on a fishing stream.



FULLER BROOK



MRS. ROSE LAWLER, LEWIS, TOWN, WITH A CATCH OF TROUT SHE MADE THIS YEAR

The Helgramite

By Chas. M. Wetzel

EDITOR'S NOTE: The article on the helgramite concludes Mr. Wetzel's fine contributions relative to native insects on Pennsylvania streams. The ANGLER is privileged to announce that starting with the December issue, illustrated articles on tying wet and dry flies, by Chas. M. Wetzel, will be features in this publication.

THE helgramite belongs to the order of Neuroptera and is one natural bait that is outstanding in its effectiveness for taking bass. It is a peer, far above all others, and the only other bait that can remotely compare to it is the small "stone catty" or red catfish.

Helgramites are found under the stones in the swift shallow riffles of most of our streams, especially those having a high temperature. The helgramite lives about three years in the larva stage and can be found at almost any season of the year. It is black in color and equipped with conspicuous, predatory jaws, or mandibles; those of the male, (in the adult stage) are considerably larger and more pronounced than those of the female; their color also undergoes a change, changing from black to a dark brown.

They are carnivorous and devour the larva of May and Stone flies; when fully grown, they attain a length of almost three inches.

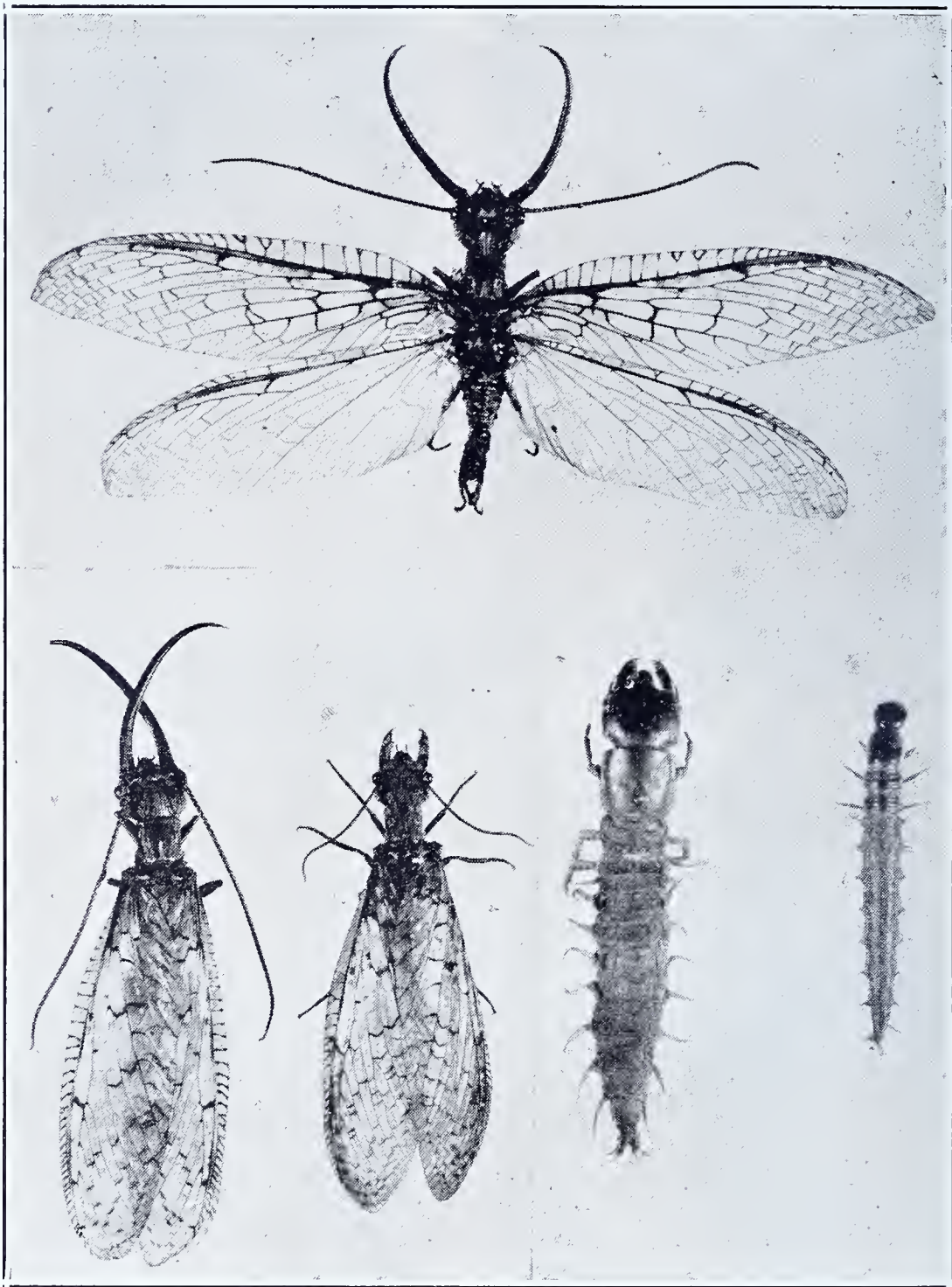
After living in the larva stage for approximately three years, the larva leaves the water and makes a cell under a stone on the bank of the stream. There the larva changes to the pupa; this occurs in June and July. About a month later, the metamorphosis is complete, and the adult insect takes to flight. The eggs are then laid and attached to stones, or brush, overhanging the water. They are laid in a chalky white mass, and measure from a half-inch to an inch in diameter. A single mass is said to contain from two to three thousand eggs. When the larva hatch, they at once drop into the water where they remain until fully grown.

In the adult stage, they have four wings, net veined, which fold closely over the body, while the insect is at rest. They make a fluttering noise as they fly over the water and are nocturnal in habit though occasionally they are seen in the daytime.

On the North Branch of the Susquehanna they are commonly known as clippers and in various other localities they are called Dobsons, Crawlers, Hell-Devils, Hell-Divers, water Grampus and various other names.

The most successful way I have yet found for taking them is as follows: Stretch a small seine across the shallow riffles at a spot where the current flows swiftly, and just below where the stones are most numerous; then one man holds the net while the other, equipped with a strong hoe, goes up-stream a distance of ten feet or so, (depending on the current's strength) and starts raking up the stream bed. The helgramites usually cling for a second to the overturned rocks; then they curl up in a black ball, and float downstream until they encounter the out-stretched net on which they cling.

Care must be exercised in handling them, for if they are squeezed, or treated roughly, they are sure to retaliate with a sharp clip from their pincers, or mandibles. I usually



COURTESY PENNA. DEPT. OF AGRICULTURE
THE HELGRAMITE IN ITS VARIOUS STAGES OF DEVELOPMENT. THE VICIOUS-LOOKING INSECT AT THE TOP IS A MALE DOBSON FLY, MATURE STAGE. THE MATURE FEMALE FLY IS SHOWN BELOW, SECOND FROM THE LEFT

grab them by the collar—this position rendering them harmless.

But they can be easily caught by one man alone in this manner. Select stones in the riffle, which are flat and wide—shake the stone—just a trifle, then gently lift it up using care not to discolor the water. The helgramites will usually be seen scurrying on the underside of the stone away from the light when they may be easily secured.

Shaking the stone just a trifle before lifting it alarms the helgramite and causes it to cling more firmly, yet occasionally it drops off and is then noticed crawling for another shelter on the stream bed.

I have kept them over a long period of time in a tub, partly filled with damp, rotten wood; others use the wet leaves of the alder; but irrespective of which method is used, one thing should be kept firmly in

mind—keep standing water out of the tub, as the helgramites die or drown in a short time.

Exceptionally large brown trout have been taken on the adult winged insect, and the larva ranks second to none, for taking bass, especially in those streams where the helgramites naturally abound. It is almost a waste of time and energy to try them on streams or lakes where the reverse of the above occurs. How strikingly this information came to my attention must be related by an incident which occurred while fishing Lake Wallenpaupack.

We were camping at the Wilsonville camp, near Hawley; it was an ideal camp site, with surface of ground sloping gently down to the lake, and in a grove of young aspen and white birches. This was my first trip to the lake that year, and the exciting stories told around the evening campfire of the huge wall-eyes, daily being caught off Spinners Point, fired my ambition.

Early in the morning, the wet slap of the waves pounding the shore carried such an irresistible appeal that further thoughts of sleep were quickly banished. Hastily gathering together fishing tackle, etc., I set off. Fishing boats, tied at the pier, rocked on the surface and gave forth bumping sounds as they gently nudged one another in the breeze. Everything gave promise of an exciting day's sport ahead and this particular morning my hopes were high as I knelt to unfasten the boat.

On the calm, leeward side of the pier, a fish cracked the water with a noisy splash; and through the slanting rays of an early morning sun, two large bass were observed, about a foot under the surface—motionless, and directly below me.

Hastily, I fastened to the hook a helgramite—one of the few still remaining after fishing the Delaware the day before. The bass eyed this strange looking creature askance, and with evident distrust, started to back away. They would have none of it, yet they leaped all over each other in an eager desire to snatch the minnow which was later lowered to them. Subsequent developments proved that there were few, if any, helgramites in the lake, and I attributed the peculiar actions of the bass to this condition.

I would like to tell briefly of another camping trip, taken on the Raystown Branch of the Juniata River, about six miles east of Everett. This occurred about five years ago, and the bass were very selective, refusing everything but helgramites.

Of all the streams I have ever fished, there is none that ever furnished such a succession of exciting moments, thrills and suspense as this one. Bass were everywhere—almost too many, since the length of time spent in securing the legal limit permitted one only a half hour's sport. But what half hours those were! Filled with smashing strikes and glorious battles, they will ever remain fresh in memory!

Getting back to the helgramite again—while fishing with it keep it constantly on the move, as it has a very annoying habit of fastening its tail to the first stone it encounters and crawling under. To obviate this difficulty, I usually twist its tail, depriving it of its adhesive or prehensile power.

When a bass strikes a helgramite, he does

it with great enthusiasm; the line shoots out through the water, leaving a silvery furrow in its wake—and so fast at times that the angler is hard pressed to strip off line fast enough to keep up with the fish.

Contrary to most of the "Old Timers" theories, I strike near the end of the first rush—and I rarely lose many fish. After the bass has run a reasonable distance stop feeding line and allow the fish to take up all the slack; then when a steady pull is felt on the line—strike hard, and you will be surprised in noting how few escape. This has the added advantage of hooking the bass in the mouth, instead of the stomach, and the small fish can then be returned to the water practically unharmed.

I have not used the helgramite much in recent years, preferring to take my bass on the fly and spinner—a fine combination equally as effective when used at the right time and place; and though my efforts at times may not have been crowned with the success of the live bait fisherman, yet I doubt if they have secured a greater degree of enjoyment regardless of the number of fish caught.

"Fish Retriever"

Vivian Love of East Waterford, Juniata County, is owner of an unusual dog, writes Warden Charlie Long. Not only is he adept at retrieving sticks thrown into the water, but he varies his retrieving activities by bringing in a fish now and then to boot.

When Tuscarora Creek was high during September, the dog in question was having the time of his life diving into the swift water and bringing in sticks tossed into the stream.

Suddenly, according to Long, as the dog was carrying a stick to shore he dropped it and dived for another object. The object at first eluded him, but a second attempt to secure it succeeded and when he came to shore he was carrying a 10-inch bullhead catfish.

BELIEVES FLOODS MAY BENEFIT TROUT STREAMS

Warden Russell Womelsdorf recently advanced an interesting theory concerning the effect of floods on fishing waters.

Concerning floods, he writes: "The general opinion seems to be that floods are more or less detrimental to a fishing stream. I have heard and remonstrated the remark that the fish are either entirely washed out of a stream or destroyed in some manner during heavy floods similar to those that occurred here last year. On the contrary, although this may not apply to streams where conditions are such that natural propagation takes a prominent part in providing fish, I firmly believe that last year's floods did a more beneficial job on our local streams, all of which are dependent to a large extent on the stocking that is done by the Fish Commission for the fishing they provide, than may be realized.



CHARLES BURDICK WITH TWO MUSKIES FROM LAKE LeBOEUF. THE LARGEST WEIGHED 14 POUNDS

"In my observation last year on some of the streams that I patrolled immediately after the flood waters had receded to normal and were clear, and before any stocking had been done, I saw sufficient fish to confirm my opinion that nature provides a way for the fish to take care of themselves regardless of the severity of a flood. I found that the stream beds had been swept clean and pools that had been almost filled with sediment, deposited in them during the droughts of several years past, were washed out deeper and larger than I have ever known them to be.

"On Huntingdon Creek and Bowmans Creek, both of which are good examples, most every pool has been provided with some kind of protection for the fish, such as overhanging stumps and roots. In some of the many places where the banks have been washed out in under, entanglements of roots, earth and shrubbery extend out over the surface of the water for a distance of four feet. Timbers from bridges and other sources were washed into the stream beds making considerably more refuge for the fish. All this has a tendency to make the streams more ideal for fishing and more inviting to the fishermen."

HOBBY

Killing watersnakes is a pet hobby with Bill White, deputy game protector of Connelstown. Recently he staged a snake hunt of a few hours and killed six of the reptiles. One of the snakes had a 10-inch sucker in its stomach, while the others had all eaten sunfish.

Plant a Willow

By Leslie W. Seylar

Member, Board of Fish Commissioners

SINCE my little squib of a suggestion appeared in the ANGLER anent the subject of planting willows along the banks of streams in order to conserve the moisture, furnish protection and shade for fish, as well as to beautify the landscape and stream banks generally, such as nothing else can possibly do, I have received many letters asking what I mean by my slogan—"PLANT A WILLOW." Many have asked, what kind of a willow? How large, how deep must it be planted, what sort of soil, how close to the water, what time of year should it be planted, and many other questions I have not time or space to enumerate.

Answering all and sundry, I just wish to say that any kind of a *green* willow stick, any size from the size or thickness of a walking cane to the size of an arm or leg, if jabbed into the ground along any stream in any soil deep enough that it will stand up without being propped, will sprout the following spring, or in fact in most cases within a few weeks after planting, even in the same season, and will in an unbelievable time grow into a sturdy and symmetrical shade tree.

I personally know of many trees of this kind, planted in this manner by men now living, that have attained a diameter of nearly four feet, and many that have been planted during my own life that have grown to three feet "across the stump."

The roots of all of the willow species are long tendril-like and round, like hairs, having a thickness of from a 64th to a 32nd of an inch, and a length sometimes of several feet, furnishing most ideal hiding places and homes for all species of fish, as well as creating of themselves an aquatic growth, and microscopic organisms upon which the fish can feed.

These roots penetrate to a considerable depth, and reach the stream, even if the tree is planted several feet back from the bank. They hold the soil against drought and flood to an extent that nothing else in the root line will do.

What is more lovely than a stream lined with graceful and symmetrical willow trees? They are almost the first to show their tender green leaves in spring and the last to shed them at the approach of winter.

When all foliage has fallen from the woodlands the willows show soft and restful along some brook that sings on its way,



PHOTO BY M. J. MYERS

lingering like autumn days when forced to go, and going when they would remain.

All fish that inhabit streams and brooks must have a home. It may be behind a rock, or a nook beneath some old gnarled and crooked root, or in some crannie 'neath an overhanging bank, but whatever it is, it is home—some place where there is safety from the perils that constantly beset the finny denizen of the brook, where he may hide and be protected from that which threatened, or to where he may retire if he is injured, to rest and recover in his own way and by his own nature.

Nothing, either of stone or rock or root or sod or grass or growth, can furnish such a haven as a willow, and no trees more perfectly add to the beauty of a landscape.

One can cut off a limb from a willow tree and stick it in the ground, without the expenditure of a minute's time or the cost of a penny, and in a few years a grove of graceful trees will shade the stream, and furnish alike food and home for the finny tribes, allowing them to grow and multiply as no other single thing attempted by mankind can do.

So I say in all good sportsmanship "PLANT A WILLOW."

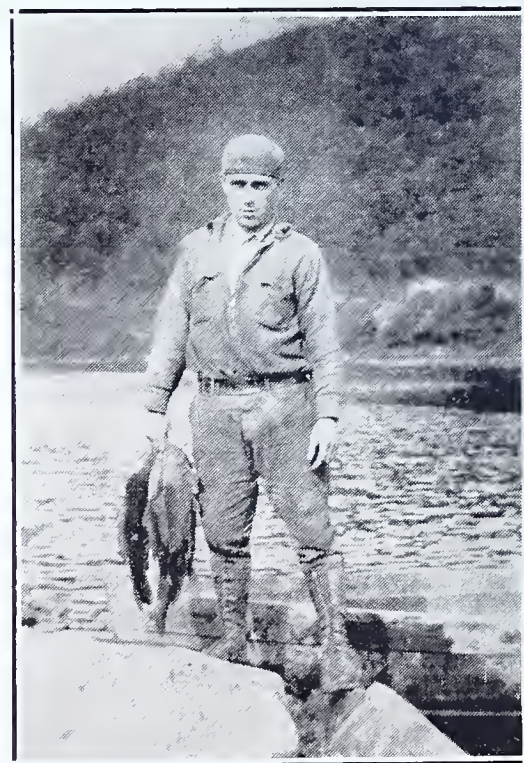


Seth Says

Ef I was ter say jest what is a-goin' ter do a lot o' good for our fish-in' in the next ten years, I reckon the nice stand o' second growth timber now comin' on

would be right in line. Back in the gap an' clean up ter the headwaters o' the trout run, there's some o' the nicest second growth hickory, oak an' white pine a feller could want ter see. It's a right big help in holdin' run-off an' a lot o' the holes is shaded by trees hangin' over 'em. This past summer I watched a couple nice trout in a hole in the meadow down below my barn an' somethin' held 'em there even durin' the hot spells we hed. Other years, I could generally figger on these trout comin' inter the hole where the water from my spring joined the crick. So I reckon the water stayed cold enough right in the main crick fer 'em an' thet the shade o' the trees up in the gap an' them ice cold feeder springs helped a lot.

There ain't nothin' sickens me quicker than seein' a tract o' burnt over timberland. An' game ain't the only thing driven out by fire. Four years back there was a tarnal bad timber fire up in Pine Run gap. Me an' Jerry Tims was along with the boys a-fightin' it an' before it was over mebbe four thousand acres was burnt. Well, sir, thet Pine Run used ter be a good mountain trout crick. Many's the time Jerry an' me caught nice messes o' trout from it. After thet fire, a feller wasn't able ter see a trout in any o' the holes where the year before was good fishin'. There wasn't no food ter hold 'em there. Trout feeds considerable on top o' the water on bugs an' flies thet drop from the brush an' with all the timber burnt I figger they most had ter move or would of starved.



A CATCH OF CARP FROM THE ALLEGHENY RIVER

BUCK TAILS ORGANIZE

Warden R. C. Bailey of Youngsville reports the organizing of an enthusiastic sportsmen's association at Marienville, Forest county, the Forest County Buck Tails.

At the organization meeting in September, G. C. Reynolds was elected president, Harry Haight, first vice-president, O. D. Reynolds, second vice-president, E. S. Fry, third vice-

president, G. L. Varney, fourth vice-president, and R. A. Kendall, secretary.

Speakers at the meeting were W. E. Stewart, president of the Oil City Buck Tails, J. C. Guilford, district game supervisor, and W. E. Hughes, former president of the Oil City Buck Tails.

Seventy-five members were enrolled at the meeting.

SPORTSMEN FRIENDS MOURN DEATH OF DR. L. S. ASPEY



DR. L. S. ASPEY

Following an illness of 13 weeks, Dr. Lewis S. Aspey of Scottdale, one of Pennsylvania's outstanding sportsmen, passed away in October at his farm residence on the Scottdale-Smithton road. An ardent advocate of conservation, Dr. Aspey from boyhood derived his sport from fishing in seeking trout with the fly-rod and in bird-shooting over some of the finest bird dogs in the state.

The following tribute to a splendid sportsman is from the pen of Kenneth A. Reid, Board member, and a close personal friend of Dr. Aspey. He writes:

"Dr. Aspey was one of the pioneer fly fishermen of this section and one of the most expert. He has taken many a youngster on the stream and schooled him in the art of fly casting while instilling in him the principles of good sportsmanship and intelligent conservation. It is interesting in this connection that he took our warden, Jim Banning, then a boy in knee breeches, to Wills Creek on his first trout fishing trip, and Jim took Dr. Aspey on his last, a few days before the start of his fatal illness last spring. In season and out of season, he has always been a willing helper in stocking the streams or in any other activity that would help the cause of fishing or hunting.

"As a wing shot, Dr. Aspey was outstanding. I have frequently seen him when out with less expert shots (which includes myself) hold fire until the others had shot and missed, before dropping the bird—and they seldom failed to drop when he shot."

FISHING

By S. W. PARTRIDGE

*Some fish for fish.
Yes, Son, get the net.
We must have meat.
Some fish for fishing,
The sight of woods and streams—
The odors of green things growing—
Of ripe ones rotting where they lie—
The steel blue waters of an early morning
Overhung with gossamer mist,
Their polished surface broken now and then
By a leaping Bass—
The soft tint of rose in the east—
The sun breaking through—
The voice of a bird—
Its sudden flight—
The soul balm
That heals the hurts
From a too hurried life
In a world where men grow cruel
Through their lust for lure.
In the quiet of the woods—
Under the blue of a heaven
Shimmering in the sunshine
Or bestream with twinkling stars—
Men grow quiet
And find within
Those finer things
That make them men.
Let's go FISHING!
Oh Boy!*

—Courtesy Florida Conservator

A MUSKIE "THRILLER"

A Lake LeBoeuf muskie that tore the gaff from his hands when it came to boat provided the greatest thrill ever experienced by Fred J. King, veteran fisherman of Waterford, Erie County. While every victory over a big muskellunge means a new thrill, the 29½ pounder that carried the gaff away takes first place as a "demon-battler," according to Mr. King. Following is an account of the catch in his own words.

"My most thrilling experience in muskie fishing dates back to July, 1906. The strike-action-gaff and landing had me going 'hot and cold.' Lake LeBoeuf has an island located near its center. From the north to the south shore lies what we call the 'bar,' a weed bed that touches the west side of the island.

"I was trolling on 100 feet of 21-thread line, using an 11-inch sucker as bait, and rowing south on the west side of the bar. The big fish struck with a rush and did that reel scream! The muskie must have seen my boat pass. At any rate, he took the opposite direction in a rush up the bar. After twenty minutes I moved up and out about fifty feet from the bar, reeling in slack line until I was opposite to where the fish had stopped. I found that he had gone into the weeds. No thrill to this.

"But after nagging a few minutes I changed my mind about the thrill. The big fish was still hooked, and told me 'to quit that.' A few 'jabs' and out he goes. The real fight started when after a few front and back jumps, he made a dash for and under the boat—broadside.

"Now, old fellow, don't get too close," I told him, "or you will get the gaff.



A MUSKIE FROM LAKE LEBOEUF

"He got it, got away with it. I was very foolish in attempting to land him so early, as he was still full of fight. That muskie took the gaff, and luckily my right arm was still in socket. After he had made a run of one hundred feet, I started the nagging again. I could get him near enough to the boat to see a few inches of the protruding gaff-hook, which measured three and one-half feet. That muskie traveled nearly around my boat before he finally gave up. I boated him after grabbing the six inches of gaff protruding above the surface, and taking a shower-bath as he came over the side. Upon examination, I found that I had made a fairly good job of gaffing him 'on the fly' as I had cut away about four and one-half inches from the head with the hook.

"Without doubt, this battle with the 29½ pounder was my greatest experience in muskie fishing, although my largest catch weighed 37 pounds."

An Editor Views Fishing and Conservation

By Harry McGuire

FISHING time is here and it is hard to keep one's mind on the really serious things of life when you've got tackle busters on the brain.

What an odd power over men's souls this fishing has. There's neither rhyme nor reason to it, I suppose, if one grows analytical about it. But, as Pascal said, "The heart has its reasons which reason knows not of." Fishing is in some mysterious other-worldly fashion connected with our hearts, and with that divine faculty in us which men call our souls. The fisherman—that elfin nonsensical wight who for no very reasonable reason bounds right into the gates of Paradise at a nibble from a slender 10-inch morsel—this fellow is indeed a paradox. He is at once a gentleman and a liar, a practical-minded old crabber and a wistful sentimentalist, a mellow philosopher one minute and a raging volcano of cussedness the next.

when perhaps that plagued blankety-blank line gets snarled. In short, the fisherman is the average human being who turned out better than the average.

All the world loves a fisherman. I think that is because the angler is in truth a man in love. Observe him before the season opens, sitting at his desk in strictly business hours, day-dreaming of far-off streams and lakes full of the most astounding brilliant-hued monsters that nature ever produced. Isn't that like a man dreaming of his love? Observe him in the early morning, preparing to depart for the fishing trip—he fusses with his tackle, he mutters that and that which means mostly nothing, he takes his coffee at a gulp, he hums old forgotten tunes to himself, and in short he is ridiculously, deliriously happy. Isn't that like a man going to see his love? Observe him on the stream or lake at the moment he

gets a strike—perhaps he whoops and shouts, perhaps he only betrays himself in the fiery sparkle of his eye and the tense coordination of every muscle, but in any case he is in a frenzy of delight, he is a very god in that moment of exaltation. For one instant at least he is aware of the joyousness of all existence. Yes—all the world loves a fisherman—for he loves all the world.

So it seems to me, fishing being what it is, that of the fisherman is demanded a very special kind of consideration. Let the fisherman be a real and constant lover of the woods and waters and their creatures—the role of the blood-and-thunder conqueror scarcely fits him. Let him release all fish not necessary for his table or his den. Let him dwell on the fitness of sliding that big musky back into the water after photographing it. Let him contemplate for a moment the pristine beauty of those tiny 8-inch trout, for perchance he will be moved to take them on a barbless hook the better to return them to the water. Let him stop on a little eminence some day and, feasting his heart on the multitude of Nature's blessings, ponder on how he can show some return of kindness to Nature's wild life.

Let him recall that fishing for sport is a gentleman's recreation. A fish-hog, a fish-slaughterer, is a contradiction in terms. Now that good fishing is scarce, it particularly behooves the angler to propagate as well as kill, and to spare the lives of most of the fish he catches, so that others will learn to do the same thing and by this gentlemanly consideration preserve better sport and more fish for all.

We need fishermen in our struggle to implant in the public mind what I am minded to call "Conservation Consciousness."

There are two kinds of laws in sport. One is a legal regulation—the game and fish laws of state and nation. The observation of these regulations, which almost without exception are aimed at the greatest good for the greatest number, must be scrupulously observed by you and me before we're entitled to call ourselves outdoorsmen. But something more is necessary if we outdoorsmen are to be knighted with that noble term, the title Sportsmen—and that is the spirit of conservation, a vast love for wildlife which shows itself in treating the creatures of forest and stream with respect, and in killing them only in moderation. That is what we term "Conservation Consciousness," and I don't think it is far astray to say that the future of wild life in America depends more on the growth of this magnanimous attitude in the public mind than it does on any other single factor.

Research into wild life habits, which is now being enormously stimulated, is absolutely necessary. So is the establishment of refuges, the control of vermin and pollution. So is restocking and scientific management of game and fish. But all these activities depend upon the development of a public mental attitude which will lend them support. You and I must be missionaries to the American public, helping the thoughtless and the ignorant to respond to Nature in spirit; and by respecting and not desecrating her, to give back to Nature something of the spiritual beauty and the peace she is so willing to lend to us weary humans.

(Continued on page 11)

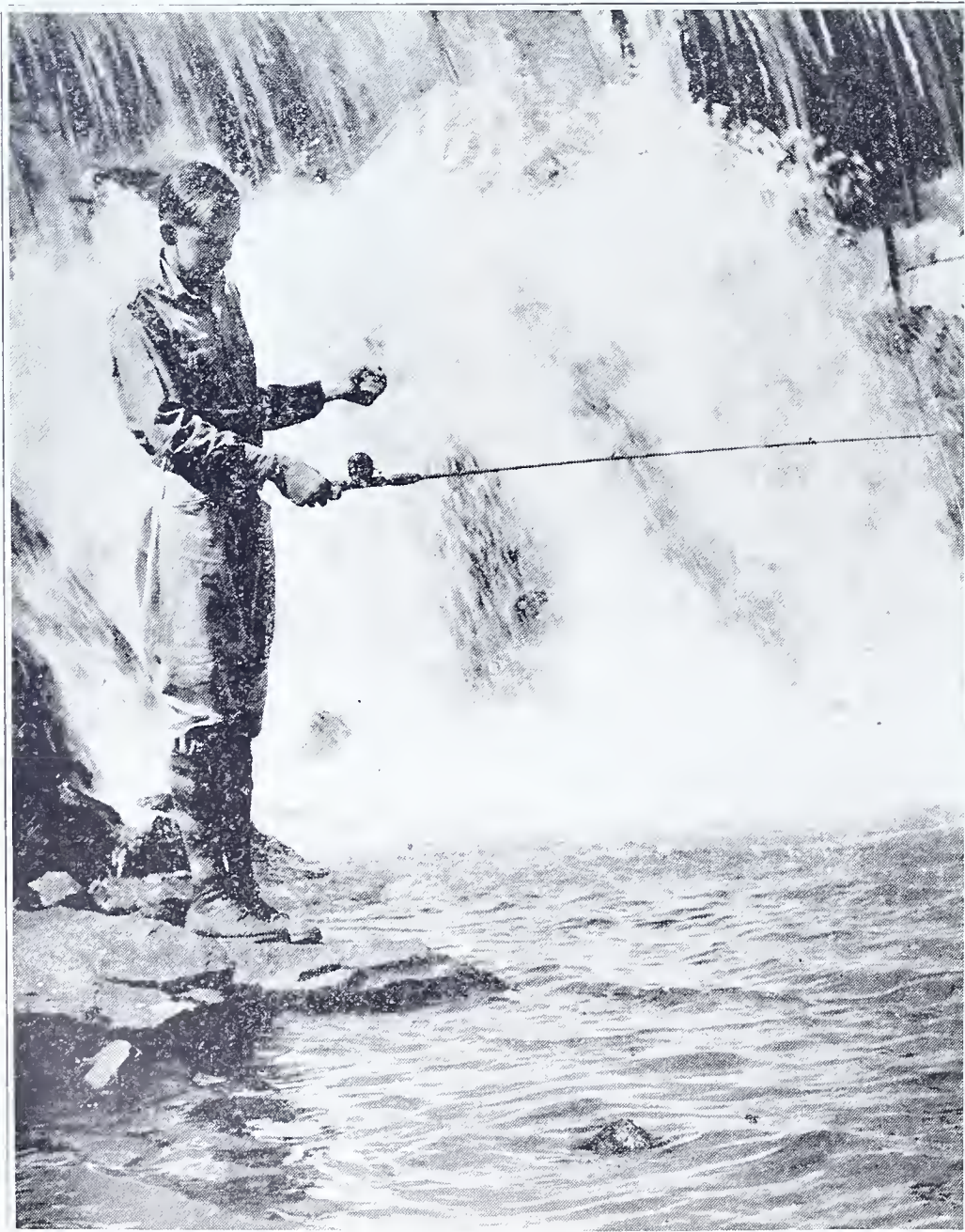


PHOTO BY LAMAR MUMBAR

DAYS ASTREAM

A Section Contributed by Readers of PENNSYLVANIA ANGLER

Creek Fishing for Bass

By J. Allen Barrett
Harrisburg



DAWN, and a new day about to begin. Already faint streaks of amber and pink shot across the eastern sky and save for the chirping of a few early birds everything seemed ghostly still. I quietly slipped into the water at what is commonly called the "hog trough" on the bend a short distance below the "old Jake Shearer Place" on Sherman's creek in Perry county. Splash.—Zoom.—and my attention was called to the opposite side of the stream where a big fellow (as big fellows go in a creek) made a desperate lunge at a shiner which fairly skipped, like a flat stone, over the water. I took a live chub from my boat float box and putting him on the hook, I smacked it out, over and laid it very near the exact spot. Leaving it float naturally for a moment, I then drew it gently to and over the surface of the water. Nothing happened. On the second cast I placed it just a little lower and again left it float natural, and was just about to draw it slowly across the surface when—Wham.—he took it and headed rather hurriedly upstream a short distance, where he stopped. Keeping the line taut, I could feel the vibration as he turned the chub and swallowed. He was in the act of swimming away when I snubbed him, and then what a fracas. A good scrap in very precarious water. The bottom literally covered with long hairy grass. After a short

fight I brought him over and lifted him out. A beautiful (creek) black bass fifteen inches long. Putting it on a live stringer, I sort of complimented myself in getting off to a good start.

After putting a new minnow on, I carefully proceeded down to the edge of the trough, mindful not to kick too much vegetation and silt from a thickly covered bottom. Floating the bait in its natural manner about thirty feet to the right and ahead of me, I believe I put it into every nook and corner of the trough with no results. Not another strike.

It was close to nine o'clock when I reached the remains of an old fish basket way down at the foot of a long deep hole. Stopping, I sat on a large rock that stuck out of the water and began to figure it out. While the feeding on minnows happened now and then, it was very seldom. I looked the surface of the water over thoroughly for some kind of bug or fly hatch. I did notice that quite frequently something would break the water at many places and knew it was bass feeding, but on what I could not yet determine. Laying the rod on the rock, I waded to shore and stepping upon the bank I found the grass and weeds alive with a good sized hopper. A sort of drowsy fellow without much pep. Catching a few, I returned to the rod and changed bait. Taking

the rest of the grasshoppers I threw them as far as possible in the water, up stream. Two came floating and kicking back to me, but the others were lost in the short ripples that followed their hitting the water. Having learned the story I sent another hopper up only this time with a hook in it. No sooner hit the water than Bang.—and Bang.—again, I had a ten inch bass. Cutting this fellow open I found three in his stomach. Laying the rod back on the rock again, I headed for shore. When I returned a short time later I had my glass jar full of hoppers and was now ready to start back up to the trough. Fastening the live bait box to some rocks, I left it there. At noon I crawled out on the bank and had lunch at practically the same spot where I began to fish at daylight, only this time I had ten nice bass and a good sized grass pike, and had returned quite a few small bass to the water.

I find 'hoppers, crickets, cockroaches and bugs in general, excellent bait and never go on a stream without a goodly supply of one or all of them. Requires a little more patience and sweet oil to use them properly, but I find any game fish in a creek can be tempted to his doom by a dangling squirming bug. As a rule I find early morning and late evening is good for live bait, while many are taken now and then throughout the entire day. However from along about ten o'clock A. M. and especially long toward and during evening the 'hoppers, crickets and bugs are masters of ceremony in a bass or trout stream. This opinion might be prompted by a selfish preference over the dry or wet artificial fly, however I find the results quite satisfactory and the game chuck full of sport.

A RATTLER EPISODE

The deadly effects of a rattlesnake's bite is clearly illustrated in the following communication from Dr. B. D. Hetrick of the Butler County Sportsmen's Association.

"Oneida Dam, in Butler County," he writes, "furnishes excellent fishing for largemouth bass, perch, and bluegills. The banks of this water are kept in excellent order and are moved back for a distance of at least 50 to 100 feet. During the mowing of the south bank in the summer of 1932, a team of mules were used. At the noon hour, the mules were permitted to graze at will. One, grazing near a stump, was seen to suddenly throw its head up and rear back as if hurt or startled. Investigation showed that it had been struck in the fleshy part of the upper lip by what proved to be a rattlesnake of the Massasauga variety.

"In spite of the services of a veterinarian the mule passed on and those who saw it say that its head was nearly as broad as it was long at the time of its death."

LOST!

By N. R. Casillo

EDITOR'S NOTE: *Mr. Casillo's snappy style in writing has been a constant source of pleasure to ANGLER readers this year. In "Lost" he presents a vivid account of what may happen to any fisherman who penetrates to wilderness waters in our mountain country.*

AT the top of the ridge where I confidently expected to strike the road, I was confronted by a forest of hemlocks and scattered clumps of poplar. I continued on down the other side, crossed a stream flowing in the opposite direction from the one I had just quit, and slowly and reassuringly climbed a second and much higher ridge. The stiff climb started the perspiration in spite of the chill April air. What a relief it would be to my aching muscles to be on the comparatively level surface of the road I sought. Again I was doomed to disappointment, for instead of the road, a vast expanse of dripping woodland unfolded itself before me.

"No," I argued with myself. "I'm not lost—not yet."

I looked about apprehensively, for the rapidly approaching darkness had already transformed the poplars into groups of ghostly, uncertain figures, huddling in the shadows of the brooding hemlocks.

Suddenly it occurred to me that I was cold, hungry and soaked to the skin by the icy drizzle from without and by the steaming products of my exertions from within. And here I was, approximately seven long miles from the car, that is, if I could retrace my steps and if I had not walked in circles. Furthermore, I had no idea what the hour was. I had forgotten my watch and that was one of the reasons for my predicament.

Throughout the day the sky had been overcast and at regular intervals a soaking shower augmented the steady drizzle. Periodically, the sky would change in density, varying from a medium to a very sombre gray. I was not aware of the sun's setting. The continued gloom I attributed to an unusually long period of overcast. Besides, the new country and its fine trout drove all thought of the passing time from my mind. My watch could have rendered indispensable service during these moments of uncertainty.

My companion, whom I had not seen since early morning, claimed he knew the country, so I accepted his plan without question.

"You start fishing at this point," he nodded toward the roaring stream rushing through the picturesque ravine bordering the road.

"The stream runs parallel to the road," he continued. "Three miles down the road I'll park the car and strike out for the stream. At the point where I start fishing, I'll tie a handkerchief on a conspicuous bush on the same side of the stream, and directly opposite the spot where you'll find the car. Drive down from there and pick me up."

All went well until I endeavored to find the handkerchief; but to no avail. Therefore, I continued downstream until the unusually long period of gloom, presaging darkness, prompted me to strike out for the alleged location of the road.

In spite of my confusion, I tried to assure myself that all was right and attempted to



THE STREAM THAT WAS SO DIFFICULT TO FIND

retrace my steps. I swung along the back trail with an assumed air of unconcern, which, I must confess, did not last for long. Seized with a sudden and mysterious feeling of presentiment, I was soon dashing through the forest like one possessed.

Down in the long, narrow valley the gloom had increased to a semi-darkness. And when I crossed the stream that I had first encountered on my way to the supposed location of the road, I wondered if it couldn't be the same one that I had fished.

"But," I thought aloud, "it's flowing in the opposite direction—or isn't it?"

Of course, the longer I pondered the more perplexed I became. Finally, I impulsively decided to go on.

The rain had now changed to a fine sleet, a steady, cold wind had arisen, and ice was beginning to encase the naked limbs of the hardwoods. I encountered nothing that looked familiar, and again I was clutched by that tight, icy sensation that I had experienced once before. It never once occurred to me that my viewpoint was entirely reversed. At the top of the ridge I threw all restraint to the winds and madly tore down the slope, crashing into windfalls and plowing through the undergrowth. At last, a resounding crash against a tree just about knocked the wind out of me and drove some sense into my head. Picking myself up, I soberly and quietly continued down the hill.

Whatever caused those surges of panic to overwhelm me is difficult to explain. In spite of contradictory evidence, I thoroughly convinced myself that I wasn't lost. Besides, hadn't I spent many a night in the woods and liked it? Yet here I was on the verge of a literal nervous breakdown. Was it because I was unwilling to submit myself to

the inevitable and make the best of it? I had matches and could undoubtedly spend a fair night even in the face of the unfavorable elements. Upon final analysis I concluded that the "feeling" was prompted by the ever-growing conviction that I was lost. Yes, I had to admit it. I was lost in a state that has a population of 213.6 people to the square mile; the second largest in the Union in point of population!

My conviction became an actuality when I reached the foot of the slope, for where I had expected to find a stream, there was an interminable marsh—a morass choked with alders and other small growths. And before I realized it, I was tearing through it. Only when I felt the shocking chill of water did I stop.

Somehow I extricated myself from the clinging mud and struggled back to higher ground still clinging to my dismantled fly-rod. In exhaustion I flopped to the sodden ground and laid there for a long time, listening to my labored breathing.

If all of the things that one instinctively dreads while lost should descend upon him with one full swoop, nine out of ten individuals would toss fear to the winds and use a little common sense in combating the more or less imaginative enemies. There is no doubt that the sufferings are due more to mental than to physical anguish. Even when physical pain is present, mental torture so far overshadows it as to make the former appear insignificant.

In my case as I sat on the sloppy ground in wet clothing, I was entirely unconscious to all physical discomfort. Only when some horse sense seeped into my brain did I realize that my predicament wasn't as serious as it seemed. And of course, as the mental

discomforts ceased their harassing, I became acutely aware of the physical ones. Hunger, cold, burning scratches and aching bruises.

"Why bother about getting out now—might as well wait until daylight," I muttered to myself.

With a superhuman effort I threw everything extraneous from my mind and concentrated on the situation at hand.

Fire is the sesame to any such situation, so I collected a small quantity of wood and proceeded to build one. As soon as my clothing dried, and I had consoled myself that a night in the woods would not be so bad, I began to feel the pangs of hunger to a tremendous degree. And now that I could think with some logic, I immediately thought of the dozen or more trout in my creel. Those broiled, unseasoned trout will ever remain in my memory as the most delectable bits of nourishment that ever slid down my throat.

Soothing heat, a tired body and a full stomach soon worked their magic and I dozed only to awaken with a start. The fire was burning low and I replenished it.

"Strange," I muttered, now wide awake. "I would have sworn that I heard voices."

For a number of minutes I listened intently; then tense nerves relaxed, and once again I slept.

Some time later I awakened again. Shivering with cold, I turned to the faintly luminous bed of coals that was once the fire, and began the painful operation of stretching my cramped limbs. Suddenly, I was electrified by a call seemingly not more than a couple of hundred yards away.

My answer elicited a chorus of yells and then I heard my name called, and could now see lights flitting here and there among the trees on the slope above me.

In a few minutes, Chet Bauder, my erring companion, accompanied by three stalwart individuals was attempting to explain the situation:

"I waited for you down the road until after dark. When you didn't show up I became alarmed. Fortunately, I ran into these fellows and we set out to find you. Of course, when we reached the car, we knew that you were still thrashing the bush down in here."

"Yes, I did plenty of thrashing," I agreed. "Where's that plagued road that you told me about?"

"Back there about a hundred yards," one of the strangers volunteered, pointing up toward the top of the ridge.

"Then, how in the deuce did I miss it?" I asked in vexation.

"You know," Chet interrupted, "I plumb forgot that at this point, the road diverges to the right and the stream to the left. It's been a long time since I was up in this region," he added apologetically.

"Did you do any fishing?" I asked, attempting to hide my chagrin.

"No, I didn't," he answered sheepishly.

"Why not?"

"Well, you know, I never was much on this direction business," he grinned.

"What do you mean?"

"Oh, just this—I couldn't find the stream."

Happily as this little episode ended, it nevertheless indelibly impressed on my mind the absolute necessity for observing a num-

ber of rules and the taking of certain precautions when going into the woods.

If one should miss his way or is overtaken by darkness, the first thing to remember is, like the Indian: "You are not lost; it is the tepee that is lost. It isn't serious unless you do something foolish."

Don't attempt to make your way through the darkness. Find a comfortable spot, build a fire and wait. Your friends will soon find you. Never go anywhere alone unless you first inform some one in your party of your intended destination and routes to be followed. Know the location of your camp or starting point and frequently check its location with your compass.

It is not only wise but necessary to carry a compass, a watch, a good stout knife and plenty of matches. A fishing line and a few hooks are never amiss in a spare pocket.

Remember, you can't starve to death immediately. Starvation is a slow process and the man who does not tire himself tearing madly through the woods can survive many days on water alone. Familiarize yourself with edible woodland plants and fruits. Even in the dead of winter one who knows can find enough food to sustain life for months.

The worst thing to do is to get frightened. It is fear that robs one of his judgment and strength and often turns a passing experience into a tragedy. Keep cool and don't run!

IZAACK WALTON LEAGUE MEETS AT HAZLETON

The National Convention of the Pennsylvania Division of the Izaak Walton League was held in the Altamont Hotel, Hazleton, on October 5th and 6th. Prior to the regular meeting the Directors assembled in the evening of October 4th, and at the sessions on the 5th papers were presented by Grover C. Ladner, Honorable John Q. Creveling, Honorable William H. Moore, Ernest E. Harwood, D. G. Baughman, Kenneth A. Reid and S. B. Locke, National Conservation Director in the League.

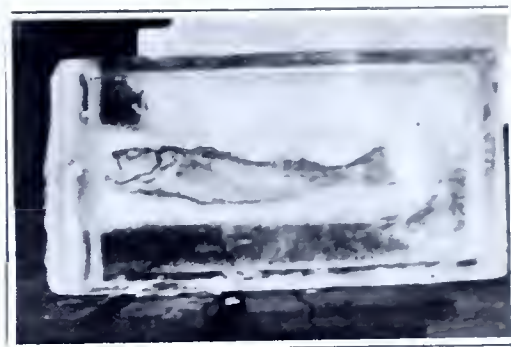
The banquet that evening was attended by 150.

Speakers included P. G. Platt, President of the State Division, S. B. Locke, National Conservation Director of the League, and Kenneth A. Reid. The principal speaker of the evening, G. Wharton Huber, Curator of Birds, talked on Bird Life and showed some very interesting pictures.

On the morning of the 6th the Resolutions Committee made its report, which was adopted by the meeting. The principal Resolutions were as follows:

First. Suggesting an amendment to the fish code, giving to the Board of Fish Commissioners enlarged powers which would permit them to make changes in size limits, creel limits, seasons, etc. from time to time, as needed, without the necessity of going to the Legislature for an Act on each minor change. This would put them on a par with the Game Commission.

Second. Then to ask for an Act of the Legislature increasing the fishing license fee to \$2.00 net, with the provision that the additional amount be set aside in a fund



MAURICE BANKER, OF HUNTINGDON, SENT US THIS PICTURE OF A 7½ POUND PIKE-PERCH CAUGHT IN THE JUNIATA RIVER THIS YEAR

separate and apart for the acquisition by purchase, lease under proper terms, improvement and maintenance of public fishing waters.

Third. Advocate Sunday fishing, and the training of dogs on Sunday.

Fourth. Endorsing the Game Commission's policy in keeping roads that have been built on State game lands for Administration purposes, closed to public use.

Fifth. Recommending that the receipts in the Department of Forests and Waters be retained for the use of that Department, and not put into the School Fund, as is the case at present.

On Saturday noon the Committee of the Local Chapter drove the guests to their Chapter Farm for luncheon, and took them on an inspection trip over their Game and Trout Farm, and some of the interesting points in the surrounding country.

WE APPRECIATE THIS COMMENT

PENNSYLVANIA ANGLER is indebted to the editor of the Pocono Mountaineer of Cresco for the following fine comments on this magazine as a companion publication to PENNSYLVANIA GAME NEWS.

"Every Pennsylvania hunter should be a subscriber and reader of PENNSYLVANIA GAME NEWS, a most interesting and educational monthly magazine published in Harrisburg 'in the interest of sportsmen.' Its subscription price, 50 cents per year, is ridiculously small for the wealth of information and good reading each issue contains. Its companion magazine, the PENNSYLVANIA ANGLER, is equally as good, and fishermen who are not subscribers are missing some mighty fine fish stories. Both periodicals are profusely illustrated. I have little or no time to hunt or fish (dad drat it), but I enjoy reading the experiences of others as told each month in these two magazines. A dollar spent for both of them would be the best buck you ever invested."

EDITOR VIEWS CONSERVATION

(Continued from page 8)

There is the menace of the politician getting control of our game and fish departments, a situation actually existing in almost half of our states. There is the spectacle of great corporations polluting our recreation waters and defying us to do anything about it. There are these causes calling us to sacrifice something so they may be determined for the right.

NOVEMBER DISTRIBUTION OVER MILLION MARK

DISTRIBUTION of 1,056,700 fish and frogs to waters of the Commonwealth during September has been announced by the Fish Commission. September stocking included 77,630 black bass fingerlings, 190,606 bullhead catfish fingerlings; 815 pickerel averaging 14 inches in length, 447,950 bluegill sunfish fingerlings, 288,200 frogs, 26,000 yellow perch averaging 3 inches in length, 20,160 brown trout averaging 8 inches in length, and 5,320 brook trout averaging 8 inches.

The following waters in the different counties were stocked with the various species:

Adams—black bass, Marsh Creek, Bermudian Creek; yellow perch, Marsh Creek, Bermudian Creek.

Armstrong—black bass, Allegheny River; catfish, Allegheny River, Buffalo Creek, Buffalo and Susquehanna Coal Company Dam, Craig Run; frogs, Allegheny River, Buffalo Creek, Craig Run, Buffalo and Susquehanna Coal Company Dam; sunfish, Allegheny River, Buffalo Creek, Buffalo and Susquehanna Coal Company Dam, Craig Run.

Beaver—black bass, North Branch Little Beaver River; frogs, North Branch Little Beaver River; yellow perch, North Branch Little Beaver River.

Bedford—black bass, Wills Creek, Dunning Creek; catfish, Wills Creek, Raystown Branch Juniata River, Woodbury Dam on Yellow Creek; frogs, Wills Creek, Raystown Branch Juniata River, Woodbury Dam on Yellow Creek; sunfish, Raystown Branch Juniata River, Woodbury Dam on Yellow Creek; yellow perch, Dunning Creek.

Berks—black bass, Maiden Creek, Monocacy Creek, Tulpehocken Creek, Manatawney Creek; catfish, Boyertown Water Co. Dam, Manatawney Creek, Maiden Creek, Monocacy Creek, Tulpehocken Creek; frogs, Boyertown Water Company Dam, Manatawney Creek; sunfish, Boyertown Water Company Dam, Manatawney Creek.

Blair—black bass, Frankstown Branch Juniata River; catfish, Stevens Dam on Sinking Creek; frogs, Stevens Dam on Sinking Creek; sunfish, Frankstown Branch Juniata River, Stevens Dam on Sinking Creek.

Bradford—black bass, Sugar Creek; yellow perch, Sugar Creek.

Bucks—black bass, Northeast Branch Perkiomen Creek, Delaware River, Little Neshaminy Creek, Tohickon Creek, East Swamp Creek, Neshaminy Creek, Tinicum Creek; catfish, Delaware River, Little Neshaminy Creek, Tohickon Creek, East Swamp Creek, Neshaminy Creek, Tinicum Creek, Deep Run, Queen Anns Creek, Silver Lake, Maple Beach Pond, Northeast Branch Perkiomen Creek; frogs, Northeast Branch Perkiomen Creek, Tinicum Creek, Deep Run, Delaware River, Little Neshaminy Creek, Neshaminy Creek, Tohickon Creek, East Swamp Creek, Maple Beach Pond, Silver Lake, Queen Anns Creek; sunfish, Delaware River, Tinicum Creek, Deep Creek, Northeast Branch Perkiomen Creek, Silver Lake, Queen Ann Creek, Maple Beach Pond, East Swamp, Tohickon Creek, Little Neshaminy Creek, Neshaminy Creek; yellow perch, Northeast Branch Perkiomen Creek.

Butler—black bass, Buffalo Creek, Yellow Creek; catfish, Buffalo Creek, Yellow Creek, Harmony Junction Reservoir, Breakneck Creek, Buhl's Channel, Glade Run, Wolf Creek; sunfish, Yellow Creek, Glade Run, Wolf Creek, Buffalo Creek, Harmony Junction Reservoir, Breakneck Creek, Buhl's Channel; frogs, Glade Run, Wolf Creek, Buffalo Creek; yellow perch, Buffalo Creek.

Cambria—catfish, Dooman Dam, Davis Run, Beaver Dam Run; frogs, Dooman Dam,



MYER RUBINFOFF WITH A 6 POUND WALL-EYE FROM CONNEAUT LAKE

Davis Run, Beaver Dam Run; sunfish, Dooman Dam, Davis Run, Beaver Dam Run.

Carbon—trout, Pohopoco Creek, Wild Creek; black bass, French Creek, West Branch Brandywine Creek, East Branch Octoraro Creek; catfish, French Creek, West Branch Brandywine Creek, East Branch Octoraro Creek, Bradford Hills Pond, Blue Quarry Hole, Big Elk Creek, East Branch Big Elk Creek, Potts Dam on Perkins Run, Buck Run, Muddy Creek, Brandywine Creek, East Branch Brandywine Creek; frogs, East Branch Brandywine Creek, West Branch Brandywine Creek, Brandywine Creek, Muddy Creek, East Branch Octoraro Creek, Buck Run, Potts Dam on Perkins Run, Bradford Hills Pond, Blue Quarry Hole, Big Elk Creek, East Branch Big Elk Creek; sunfish, Bradford Hills Pond, Blue Quarry Hole, Big Elk Creek, East Branch Big Elk Creek, Potts Dam on Perkins Run, Buck Run, Brandywine Creek, East Branch Brandywine Creek, West Branch Brandywine Creek, East Branch Octoraro Creek, Muddy Creek; yellow perch, French Creek.

Centre—catfish, Kephart Dam, Bald Eagle Creek, Rotes Mill Dam, Red Mills Dam; frogs, Kepharts Dam, Bald Eagle Creek, Rotes Mill Dam, Red Mill Dam; sunfish, Kepharts Dam, Bald Eagle Creek, Rotes Mill Dam, Sinking Creek.

Clarion—black bass, Red Bank Creek; catfish, Snakehead Pond, Red Bank Creek, Allegheny River; frogs, Snakehead Pond, Red Bank Creek, Allegheny River; sunfish, Alle-

gheny River, Snakehead Pond, Red Bank Creek.

Clearfield—black bass, Little Clearfield Creek; catfish, Little Clearfield Creek, frogs, Little Clearfield Creek.

Clinton—catfish, Pine Creek; frogs, Pine Creek; sunfish, Pine Creek.

Columbia—black bass, Huntingdon Creek; yellow perch, Huntingdon Creek.

Crawford—black bass, Conneaut Creek, French Creek; trout, Thompson Creek; catfish, French Creek, Conneaut Lake, Sugar Lake; frogs, Conneaut Creek, Conneaut Lake, Sugar Lake; sunfish, Sugar Lake, Conneaut Lake; yellow perch, Conneaut Creek.

Delaware—black bass, Darby Creek; catfish, Darby Creek.

Elk—catfish, Becks Pond, Black Swamp Pond; frogs, Becks Pond, Black Swamp Pond; sunfish, Becks Pond, Black Swamp Pond.

Erie—black bass, Conneaut Creek; yellow perch, Conneaut Creek.

Fulton—black bass, Licking Creek; catfish, Licking Creek; frogs, Licking Creek.

Greene—black bass, Pennsylvania Fork, Whiteley Creek, South Fork Wheeling Creek, Wheeling Creek; catfish, Muddy Creek; frogs, Muddy Creek; sunfish, Muddy Creek, Whiteley Creek.

Huntingdon—black bass, Aughwick Creek, Standing Stone Creek, Penn Central Dam on Raystown Branch Juniata River; catfish, Whipple Dam on Laurel Run, Standing Stone Creek, Penn Central Dam on Raystown Branch, Raystown Branch Juniata River, Juniata River, Frankstown Branch Juniata River, Shaver Creek, Penn Central Dam on Frankstown Branch Juniata River; frogs, Whipple Dam on Laurel Run, Standing Stone Creek, Penn Central Dam on Raystown Branch Juniata River, Raystown Branch Juniata River, Juniata River, Frankstown Branch Juniata River, Shaver Creek, Penn Central Dam on Frankstown Branch Juniata River; sunfish, Penn Central Dam on Raystown Branch Juniata River, Whipple Dam on Laurel Run, Standing Stone Creek, Penn Central Dam on Raystown Branch Juniata River, Raystown Branch Juniata River, Juniata River, Frankstown Branch Juniata River, Shaver Creek, Penn Central Dam on Frankstown Branch Juniata River; yellow perch, Aughwick Creek, Standing Stone Creek.

Indiana—catfish, Yellow Creek, Muddy Run, Little Mahoning Creek, Cush Cushion Creek; frogs, Little Mahoning Creek, Cush Cushion Creek; sunfish, Yellow Creek, Muddy Run, Little Mahoning Creek, Cush Cushion Creek.

Jefferson—catfish, Water Supply Dam, Red Bank Creek, Sandy Lick Creek, Strouse Dam; frogs, Sandy Lick Creek, Strouse Dam, Waterworks Dam, Red Bank Creek; sunfish, Water Supply Dam, Red Bank Creek, Sandy Lick Creek, Strouse Dam.

Lancaster—Black bass, Holtwood Dam, Conowingo Creek, Conestoga Creek, Octoraro Creek, Muddy Creek, Cocalico Creek; catfish, Holtwood Dam, Conestoga Creek, Muddy Creek, Cocalico Creek, Safe Harbor Dam, Conowingo Dam; frogs, Safe Harbor Dam, Conowingo Dam, Holtwood Dam; sunfish, Holtwood Dam, Conowingo Dam, Safe Harbor Dam; yellow perch, Holtwood Dam, Conowingo Dam, Octoraro Creek.

Lawrence—black bass, Shenango River; catfish, Youngstown Quarry Hole, Carbon

Quarry Hole, Lower Power House Dam; frogs, Carbon Quarry Pool, Lower Power House Dam, Youngstown Quarry Hole; sunfish, Youngstown Quarry Hole, Carbon Quarry Pool, Lower Power House Dam; yellow perch, Shenango River.

Lebanon—black bass, Swatara Creek, Little Swatara Creek; catfish, Swatara Creek, Little Swatara Creek.

Lehigh—catfish, Swartz Mine Hole, Jordan Creek, Henninger Mine Hole, Hosensock Creek, Indian Creek Park Dam; frogs, Hosensock Creek, Indian Creek Park Dam, Jordan Creek, Henninger Mine Hole, Swartz Mine Hole; sunfish, Hosensock Creek, Indian Creek Park Dam, Henninger Mine Hole, Jordan Creek, Swartz Mine Hole, Hosensock Creek.

Luzerne—trout, Nescopeck Creek, Wapwallopen Creek, Lehigh River, Kitchen Creek.

Lycoming—trout, Pleasant Stream, White Deer Hole Creek; black bass, Pine Creek; catfish, Highland Lake, Pine Creek; frogs, Pine Creek, Highland Lake; sunfish, Pine Creek, Highland Lake; yellow perch, Pine Creek.

McKean—black bass, Allegheny River; trout, East Branch Tionesta Creek, Marvin Creek, Potato Creek; catfish, Hamlin Lake, Allegheny River; frogs, Hamlin Lake, Allegheny River; sunfish, Hamlin Lake; yellow perch, Allegheny River.

Mercer—black bass, Wolf Creek, Cool Spring Creek, Shenango River; catfish, Wolf Creek, Neshannock Creek, Shenango River, Sandy Lake; frogs, Neshannock Creek, Sandy Lake, Shenango River; sunfish, Neshannock Creek, Shenango River, Sandy Lake; yellow perch, Wolf Creek, Cool Spring Creek, Shenango River.

Mifflin—black bass, Jacks Creek; trout, Kishacoquillas Creek; catfish, Juniata River, Jacks Creek; frogs, Juniata River, Jacks Creek; sunfish, Juniata River, Jacks Creek; yellow perch, Jacks Creek.

Montgomery—black bass, Manatawney Creek, Northwest Branch Perkiomen Creek, Perkiomen Creek, Skippack Creek, Northeast Branch Perkiomen Creek, Valley Creek; catfish, Manatawney Creek, Northwest Branch Perkiomen Creek, Northeast Branch Perkiomen Creek, Skippack Creek, Towamencin Creek, Pennypack Creek, Huntingdon Valley Creek, Hosensock Creek, Macoby Creek, Ridge Valley Creek; frogs, Hosensock Creek, North East Branch Perkiomen Creek, Skippack Creek, Huntingdon Valley Creek, Pennypack Creek, Towamencin Creek, Ridge Valley Creek, Macoby Creek; sunfish, Valley Creek, Northeast Branch Perkiomen Creek, Skippack Creek, Huntingdon Valley Creek, Pennypack Creek, Towamencin Creek, Macoby Creek, Ridge Valley Creek.

Northampton—catfish, Jacoby Creek, Brays Lake, Gut Dam, Delaware River, Hokenauqua Creek, Hyers Dam on Bushkill Creek; frogs, Hyers Dam on Bushkill Creek, Hokenauqua Creek, Delaware River, Gut Dam, Brays Lake, Jacoby Creek; sunfish, Hyers Dam on Bushkill Creek, Hokenauqua Creek, Jacoby Creek, Brays Lake, Delaware River, Gut Dam.

Northumberland—black bass, Chillisquaque Creek; catfish, Chillisquaque Creek; frogs, Chillisquaque Creek.

Perry—black bass, Cocolamus Creek; yellow perch, Cocolamus Creek.

Philadelphia—catfish, League Island Lake,

Chamoniux Lake; frogs, League Island Lake, Chamoniux Lake; sunfish, League Island Lake, Chamoniux Lake.

Pike—trout, Lackawaxen River, East Branch Wallenpaupack Creek; black bass, Lake Wallenpaupack; catfish, Lake Wallenpaupack; pickerel, Lake Wallenpaupack; sunfish, Lake Wallenpaupack.

Potter—black bass, Oswayo Creek; yellow perch, Oswayo Creek.

Snyder—black bass, North Branch Middle Creek, Penns Creek; frogs, North Branch Middle Creek; yellow perch, North Branch Middle Creek, Penns Creek.

Somerset—black bass, Youghiogheny River; yellow perch, Youghiogheny River.

Sullivan—trout, Little Loyalsock Creek, Loyalsock Creek.

Susquehanna—trout, Starrucca Creek, Harmony Creek.

Tioga—trout, Long Run; catfish, Crooked Creek, Longwell Pond, Blacks Pond, Marsh Creek; frogs, Crooked Creek, Longwell Pond, Blacks Pond, Marsh Creek; sunfish, Crooked Creek, Longwell Pond, Blacks Pond, Marsh Creek.

Union—trout, North Branch Buffalo Creek, Spruce Run; black bass, White Deer Hole Creek; catfish, White Deer Hole Creek.

Venango—black bass, French Creek; trout, Pithole Creek or Mays Run, Little Scrubgrass Creek; catfish, Allegheny River; frogs, Allegheny River; sunfish, Allegheny River, French Creek.

Warren—trout, East Branch Tionesta Creek; catfish, Allegheny River, North Warren Dam; frogs, Allegheny River, North Warren Dam; sunfish, Allegheny River, North Warren Dam.

Washington—black bass, Linden Creek, Ten Mile Creek; catfish, Linden Creek, Buffalo Creek, Cross Creek; frogs, Linden Creek, Buffalo Creek, Cross Creek; sunfish, Ten Mile Creek, Buffalo Creek, Cross Creek; yellow perch, Linden Creek.

Wayne—trout, Wallenpaupack Creek, Lackawaxen River, Little Equinunk Creek, West Branch Wallenpaupack Creek, Dyberry Creek; catfish, Lake Henry; pickerel, Lake Henry; sunfish, Lake Henry.

Westmoreland—catfish, Four Mile Run; frogs, Four Mile Run; sunfish, Four Mile Run, St. Vincents Lake, Greenwalt Reservoir, Beatty Reservoir, Bagley Reservoir.

York—black bass, Bermudian Creek, West Branch Codorus Creek, Little Conewago Creek, Conewago Creek; catfish, Bermudian Creek, West Branch Codorus Creek, Little Conewago Creek; sunfish, Conewago Creek.

SUNFISH AND ROCK BASS—HOW TO DISTINGUISH THEM

What is it, a sunfish or a rock bass? Time and again, during that day astream, this question may crop up, and it has an important bearing on the slogan "Obey the Law." Rock bass, to be of legal size, must be six inches in length, and the creel limit for one day is placed at 15. They may be taken at any time in the year, Sundays excepted. No size limit has been specified for sunfish, and 25 may be legally taken in a day's fishing with rod and line.

Good water for rock bass in Pennsylvania's streams and lakes frequently yields fine catches of bluegills. Both species prey upon

Lost and Found

Emmett Wilson of Bradford had an unusual experience while trout fishing this spring on Chapel Fork stream, according to Warden J. Albert Johnson of Bradford. It seems that Emmett, fishing late in the evening, had a hard strike, set the hook in the fish and forthwith lost trout, hook and line.

He remained in camp that night and early next morning resumed his fishing. When he came to the pool in which he had lost the trout, he noticed a part of his line floating on top of the water. When he retrieved it, he found a fine 19-inch brown trout still fastened to the hook or business end of the paraphernalia.

essentially the same food supply, small minnows, worms, grubs, helgramites, small crawfish, and insects. Taken on light tackle, they are vigorous fighters, striking with a rush. Generally they are to be found in the vicinity of weed beds, admirable cover for their food supply. Rock bass, of course, prefer old sunken logs, or boulders, hovering about this chosen cover continually.

Rock bass spawn in Pennsylvania in May or early June, building their nests generally upon a gravel bar in a fairly swift current, and defending the eggs and young fish vigorously.

The spawning season of the bluegill sunfish is extended, usually taking place any time between June 15th and August 1st. A bluegill nest is saucer shaped, generally a depression cleaned out on the gravel bottom near shore. Bluegills also defend their nests valiantly until the baby fish have passed through the early stages of existence.

Attaining a maximum length of 12 inches and sometimes exceeding a pound in weight, the rock bass is a panfish of importance. In color it is olive green, conspicuously tinged with brassy, forming a dark mottling. The young are irregularly barred and blotched with black, having very little brassy. Adult rock bass have a dark spot on each scale, forming interrupted black stripes. Dark mottlings are in evidence on soft dorsal, caudal and anal fins. The eye is more or less red.

Look for the black "ear" at the upper base of the gill, generally in direct line with the eye, to distinguish the bluegill. Usually these fish run in schools, attain a maximum length of 12 inches, and weigh up to a pound. In color, they are rich greenish olive on the back, becoming paler on the sides. The top of the head is dark greenish, opercles and cheek bluish. The opercular flap or "ear" is a rich velvety black, and the sides are marked with three or four darker greenish bars. The fins are all of greenish shade, with the pectoral fin palest and reddish at the base. A large dark blotch is to be observed on the last rays of the dorsal fin, and a similar blotch is in evidence on the anal fin. In the adult bluegill, the dark bars vanish, and there are no blue stripes on the cheek. Red is not in evidence on the fins of the adult bluegills, which frequently have coppery red bellies.

CASTING TOURNAMENT RESULTS ANNOUNCED

One of the features of the Presque Isle Sportsman League Field Meet held on September 22nd, at Erie, was the Bait and Fly-Casting Tournament. The following report on results of the tournament has been made by W. L. Weber, Secretary of the Erie Bait Casting Club.

First Event— $\frac{5}{8}$ ounce bait—Accuracy, First Place: Nelson Lang, Millvale, Score 99.40—Prize, Tackle Box; Second Place: Karl Breitenbach, Millvale, Score 98.70—Prize, Necktie; Third Place: Earl Swartzman, Erie, Score 97.10—Prize, Wooden Plug.

Second Event— $\frac{5}{8}$ ounce bait—Accuracy (Unknown Distances), First Place: W. L. Weber, Erie, Score 99.50—Prize, Silk Casting Line; Second Place: Karl Breitenbach, Millvale, Score 99.30—Prize, Combination Silver Comb and Watch Chain; Third Place: Nelson Lang, Millvale, Score 99.10—Prize, First Aid Kit.

Third Event— $\frac{5}{8}$ ounce bait—Accuracy (Substituted for the $\frac{5}{8}$ ounce distance event due to insufficient entries), First Place: Nelson Lang, Millvale, Score 99.40—Prize, Trout Creel and Harness; Second Place: Karl Breitenbach, Millvale, Score 99.10—Prize, Combination Pencil and Knife; Third Place: W. L. Weber, Erie, Score 98.50—Prize, Wooden Plug Bait.

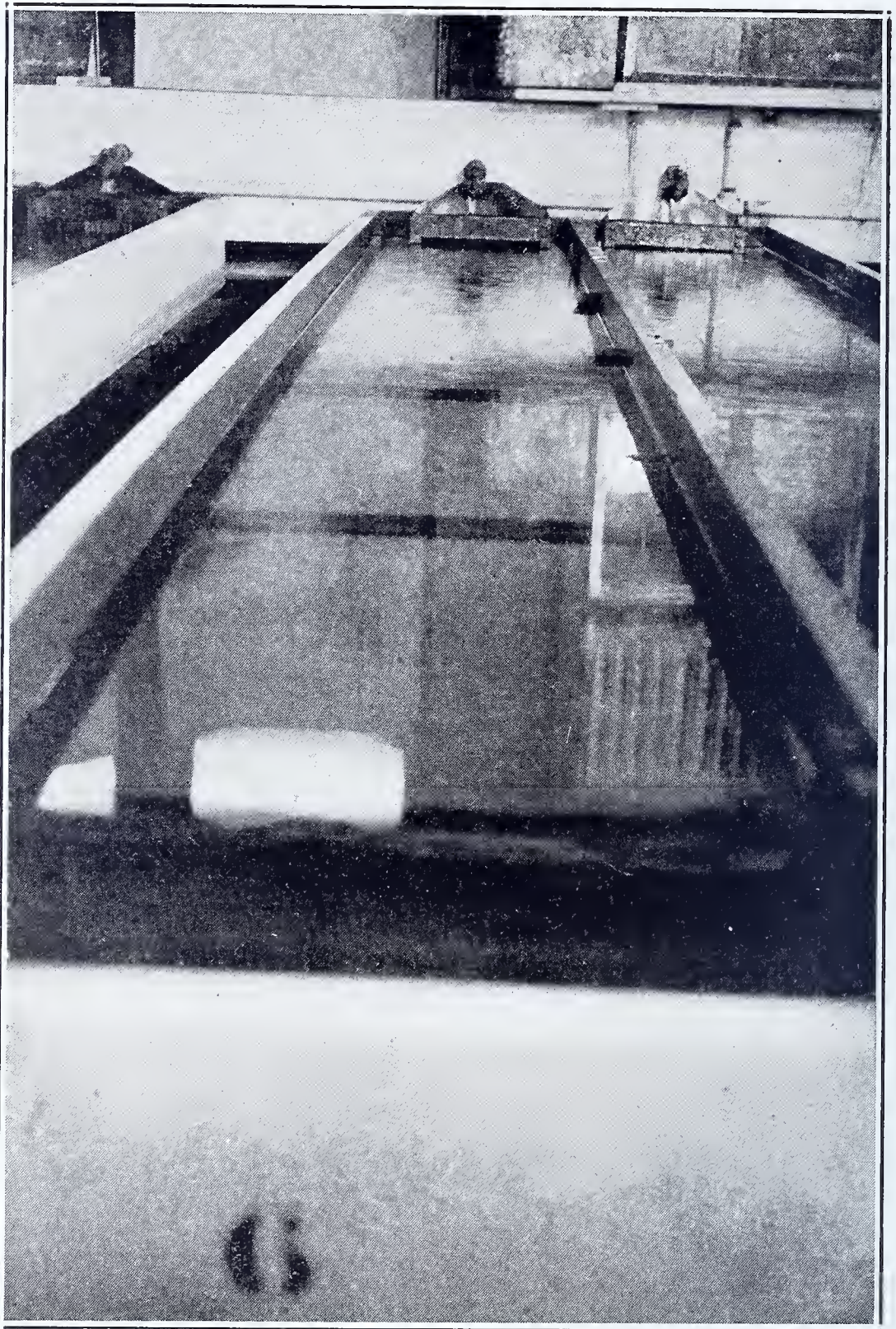
Fourth Event— $\frac{5}{8}$ ounce bait—Accuracy (Substituted for dry fly accuracy at unknown distances event due to insufficient entries), First Place: Nelson Lang, Millvale, Score 98.80—Prize, Trout Landing Net; Second Place: Karl Breitenbach, Millvale, Score 98.70—Prize, Whoopee Electric Worm Extractor; Third Place: W. L. Weber, Erie, Score 98.70—Prize, Carton Cigarettes.

Fifth Event— $\frac{5}{8}$ ounce accuracy ladies and junior event, First Place Ladies: Mrs. M. L. Warner, Erie, Score 98.40—Prize, Stringer; First Place Junior: William Allen, Erie, Score 98.00—Prize Case Combination Fork and Knife.

MONROE-PIKE SPORTSMEN HOLD MEETING

The regular meeting of the Monroe-Pike Sportsmen's Association, was held in Forrest Hall, Milford, on the evening of September 7. This town will be remembered as the home of the Governor of the State, Gifford Pinchot, and although a very stormy and rainy night, 176 loyal and true sportsmen braved the elements and were present at the meeting. Various subjects were discussed, especially the need of game birds during the winter months, and every one present was urged to build covers and scatter grain during this period of the year when the ground is covered with ice and snow. The principal speakers of the evening were:—C. R. Buller, Deputy Commissioner of Fisheries; M. E. Sherman, Division Game Supervisor; John Lohman, Jr., State Game Protector; Frank Brink, State Fish Protector and E. G. Ritter, who were warmly applauded for their inspiring and educational remarks. Wild life and fish pictures were also shown at this meeting.

The map made by C. F. Heller, Engineer for the Fish and Game Survey of the Pocono Mountains and Delaware Valley, was shown



HATCHING TROUGH FOR TROUT AT THE PLEASANT MOUNT
HATCHERY

and it was decided to have a number of these made. Near the close of the meeting C. R. Buller, Deputy Commissioner of Fisheries, was presented with a fine Meer-schaum pipe.

The present membership of the Association numbers 1032. It has shown a steady increase from its inception, and at the present time there are 18 applications for membership on the desk.

The November meeting will be held in Kellers Hall, Bushkill, Pike County, and will be known as "Hunters Meeting." All the members who attend are requested to attire in hunting togs, and stories will be swapped of hunting experiences, according to Oliver F. Evans, Association correspondent who sent in this report.

TROUT WITH A SENSE OF HUMOR

Trout in a certain small stream in Blair County have a real sense of humor, if you ask R. R. Gutshall, of Juniata, near Altoona.

Fishing fly, Gutshall had taken several nice brookies, when, following whims for which they are noted, the speckled beauties quit striking.

"I fished, and then fished some more, trying every fly in the book," writes the Blair County angler. "Finally, after I had put on a McGinty, those darned trout came at it to beat the band. The only trouble was that they hit it with their tails, not their mouths. Several times they flipped the fly clear of the water. At any rate, they seemed to enjoy the pastime."

BETTER MUSKIE FISHING ON PRESQUE ISLE BAY

Presque Isle Bay at Erie, writes W. L. Weber, of Erie, was the scene of many an exciting tussle between anglers and that gamey species of fish, the muskellunge, this summer. In the past an occasional catch was reported at the various gathering places and liveries along the Bay front but this season saw an unprecedented number taken at this ideal angler's retreat. Many of them were large enough to mount as trophies.

The favorite method to take them is to troll from power boats; the most effective lure was a spinner in copper and nickel, double type with a bucktail fly, red and white being the predominating colors. Most of the muskies taken were weighed in and recorded at Dearbeck and Christensen's Marine Supply and Boat Yard, who have formed a Muskellunge Club which boasts forty-two catches between six and twenty-one pounds in weight, taken by the following; Chris. Zilch—2, George Raeder—14, Wm. Raeder—1, W. M. Studebaker—4, Herbert Eppley—5, Walter Blass—3; Heavy Hanks—3; Herr Busch—1, Clarence Jones—2, T. B. Porter, Sr.—1, T. B. Porter, Jr.—1, Jim Deland—3, George Smith—2.

Since the Municipal Sewage Disposal plant has been in operation the waters of Presque Isle Bay have cleared up considerably, which accounts for the increasing catches of muskellunge, yellow or wall-eyed pike and small-mouth bass as well as pan fish.

TUNKHANNOCK CATCHES

A recent report from Walter Vassil of Scranton tells of good catches in Tunkhannock Creek and Lake Wallenpaupack and the killing of a number of watersnakes while fishing. Trying his luck for bass in Tunkhannock Creek on July 2, Vassil landed seven smallmouth bass ranging in length from 12 to 17½ inches, while on other trips to this stream he writes, his catches were from two to six bass. Several wall-eyed pike taken from Lake Wallenpaupack weighed over five pounds apiece. He has killed 30 watersnakes this year on the Tunkhannock and several turtles.



THEY BACK THIS SLOGAN. GEORGE ZIMMERMAN, RIGHT, AND FRED BITTNER, OF ALLENTOWN, AT PENNA. GAME, FISH AND FORESTRY PROTECTIVE ASSOCIATION PICNIC AT VALLEY FORGE



A SULLIVAN COUNTY TROUT STREAM—HOGLAND BRANCH OF ELK CREEK

LANDS TROUT FISHING IN PIKE AND WAYNE

Trout fishing poor during the past season? Not if you glean the facts from the following letter received from Floyd J. Waters of Jermyn. And by way of comment, the north-eastern counties, Pike and Wayne, provided the largest brown trout caught this year. But that is beside the point. Mr. Waters' letter follows:

"Due to the fact that I am a subscriber of your valued publication and note the trend of the published articles is to hear from the sportsmen, I wish to advise that, notwithstanding contrary opinion, the trout fishing in Wayne and Pike County this season has been very fine.

"The 'Stove Committee' prior to the opening of our trout fishing had all of the fish killed due to the extreme winter but we are satisfied that brook and brownies are able to take care of themselves.

"On May 18th while fishing dry fly on the big Lackawaxen River just above where it enters into the Delaware at Lackawaxen, I took three browns, a total weight of 6¾ pounds. A companion landed one, running the total weight for four fish up to 9½ pounds. Seven trout taken by the writer from this stream included a native, 15 inches long, and had a total weight of 11 pounds.

"Dry fly fishing is becoming most popular

in this territory and we have organized a fly rod club giving cash prizes twice a year for the largest bass and trout taken on a fly. You understand all of the men involved are former bait fishermen and while we do not prohibit our members from bait fishing, we absolutely exclude any entry except those taken in the approved fly manner."

BUG KILLED TROUT

When he observed a fingerling trout darting about in a small pool in Hopper House Hollow Run, Potter County, Harry Van Cleve, assistant chief of the Bureau of Predatory Animals in the Game Commission, caught the little fellow.

Clinging to it was a giant water bug, its claws firmly embedded in the underpart of the fish. When captured, it had already started to tear the life from the trout. So deeply had it probed that the struggle was nearly terminated, with the insect victor.

After detaching the bug, which is noted for its voracity in attacking smaller fish, he released the trout but it died in a short time.

Van Cleve brought the insect to Harrisburg, where it was preserved in alcohol.

The species live on water insects and are very destructive to fish eggs and fry.

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HERE ^{A N D} THERE IN ANGLERDOM



George Runkle, editor of the Port Royal Times, is an enthusiastic fisherman. Recently he made a fine catch of pickerel on one of the dams on Licking Creek, Juniata county. Five pickerel, ranging in length from 15 to 20 inches, were taken by Runkle.

Nine-year old Jackie Andrews who lives at Conneaut Lake furnished a real headline for the fishing news in that section when he landed a 19-inch largemouth bass, tipping the scales at 3½ pounds.

Fishing in Twin Lakes, Emerson Whitehead, of New Milford, made a catch in September of seven bass and ten bluegill sunfish, according to Frank Brink, warden at Milford. Dr. Bayley and two friends from Carbondale also made a good September catch of 18 black bass and a large number of bluegills. Another Twin Lakes catch was that of James Lutzy and his son Foster Lutzy of Carbondale. Eighteen bass and a number of bluegill sunfish were taken.

The Aughwick Creek furnished a big catch

of bullhead catfish and eels for Herbert Secrest of Mount Union. The bullheads were exceptionally large, ranging in size from 15 to 18 inches, according to warden Bill Keebaugh, who made the report of the catch. Fifteen eels were taken.

Early season fishing for wall-eyed pike was exceptional on the North Branch this year. A four-days fishing trip for Mike Dructor and Hayden Johns of Pittston, and Harold Daughton of Kingston yielded 70 wall-eyes. The fish, ranging in size from 14 to 25 inches, were taken on the night-crawler-spinner combination at Skinner's Eddy.

Dr. George B. Schuey of the Pennsylvania Department of Agriculture and stationed with the Bureau of Animal Industry at the Pittsburgh stockyards, is an ardent fisherman. So enthusiastic is he about the sport, that during a recent trip he made it a point to visit fish hatcheries in the State of Indiana. Trout, according to a friend, are a specialty with Dr. Schuey and his favorite streams are located in Forest County.

A limit catch of catfish, ranging in length from 10 to 14 inches, was made in the Warrior's Ridge dam by Charlie Haufman, Fred Albright and Charles Berkheimer of Altoona.

John McHenry of Wilkes-Barre caught a wall-eyed pike recently in Lake Silkworth that measured 28 inches and weighed 7½ pounds, writes Warden Russ Womelsdorf.

Members of the Lebanon Valley Fish and Game Association, are ardent advocates of stream improvement. With an eye to the future of trout fishing in that section of the state, the Association members have put in some hard work at improving Manada Creek. Anchored tree and log covers, V-type deflectors, stone wall deflectors, log deflectors and small dams have been constructed in the stream by the ardent Lebanon sportsmen, many of whom are working men who have put in all their spare time this summer on the creek, according to Warden Frank Sanda of Steelton.

The record rock bass for the 1934 season was taken on a plug by Charles Berkheimer of Altoona. Berkheimer caught the giant rockie, measuring 14 inches in length, in the Warrior's Ridge dam on the Juniata.

While fishing in Brown's Lake in Canadensis, Jack Mitchell, Dunmore, caught nine largemouth bass on a fly-rod, according to George Hudak, special warden. The same lake furnished a catch of eight bass, six pickerel and 25 catfish for Lester DeVol and Andrew Fischer, Jr., of Dunmore.

Stracks Dam in Lebanon County, according to Warden W. E. Wounderly, has been providing exceptional catches of bass, bluegills and pickerel. Many of the bass were landed by anglers using plug baits.

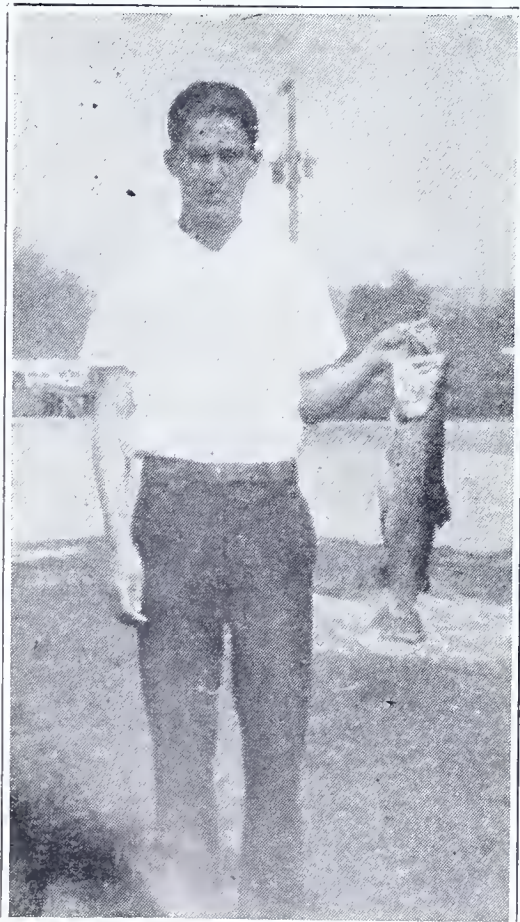
It Should Grow

Jacob Babec, of Harrisburg, while fishing from a boat in the Susquehanna River at Harrisburg, caught a rock bass just 5¾ inches in length, or one-quarter inch short of legal six-inch size specified for rockies. His fishing partner, Matt Novesel, also of Harrisburg, was amazed to see him carefully take a good-sized night-crawler from the bait can, stuff it into the rockie's mouth and carefully let the little fellow go.

"Now, what in thunder did you do that for?" inquired Matt.

"I don't like to catch these little fellows," came the answer from Babec. "So I'm feeding this rockie a good sized bait to make him grow faster so that next year he'll be big enough to take care of himself and put up a better fight."

Warden Frank Sanda, of Steelton, who reported this amusing incident, said that Babec and Novesel had real variety in their catch that day. Babec caught 4 rock bass, 2 eels, one 32 inches long; 5 catfish, 8½ to 13 inches, and a fallfish, 14½ inches long. Novesel's catch included 2 rockies, 7 catfish, up to 13 inches in length, and 4 nice bluegill sunfish.



JOHN VOGT, OF SHOHOLA, WITH 4-POUND 3-OUNCE BROWNIE FROM SHOHOLA GLEN



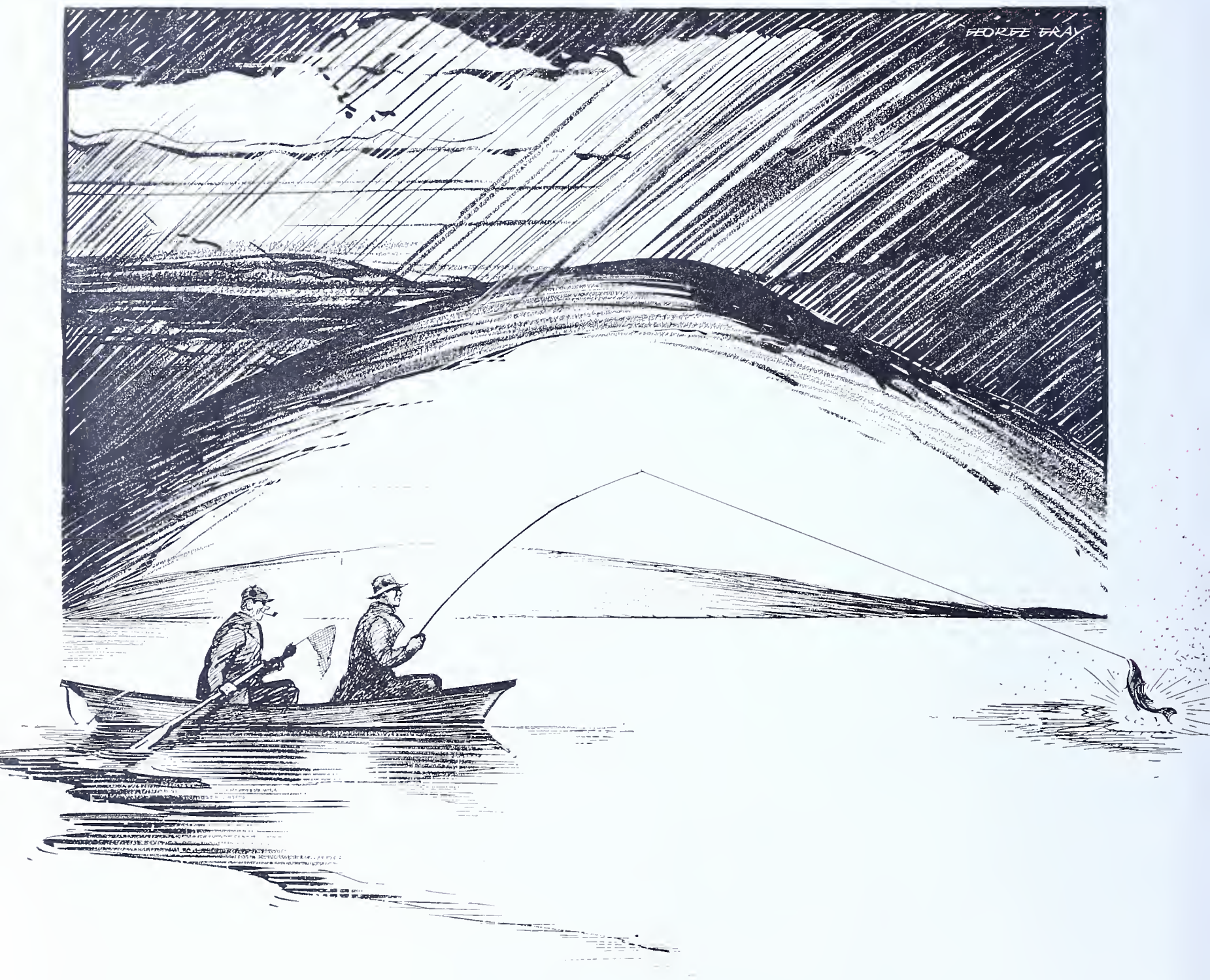
LARRY CUNEO, ERNEST KIP, BOTH OF NEW YORK, AND T. B. WHITNEY, MILFORD, WITH A TYPICAL CATCH FROM THE UPPER DELAWARE



HIGHWAY DEPT. PHOTO

KISHACOQUILLAS CREEK IN MIFFLIN COUNTY, A CENTRAL PENNSYLVANIA
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Autumn Days Are Trolling Days

PENNSYLVANIA ANGLER



WINTER ON THE YELLOW BREECHES

PHOTO BY M. J. MYERS

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PENNSYLVANIA ANGLER

DECEMBER, 1934

VOL. 3

No. 12

EDITORIAL

A THREE-WAY PROGRAM TO BETTER FISHING

Now that the 1934 season for game fish in Pennsylvania is a matter of record our interest turns naturally to another season. What are the prospects for the fishermen next year in Pennsylvania? In predicting a banner year of sport, I am taking into consideration three factors to back it—first, the wholehearted work of many of our anglers in stream improvement and their support of the fish laws; second, a general improvement in stream conditions, the raising of water levels in streams and lakes to make our present stocking program more effective, and third, increased facilities for fish production. Linked together, these factors must weigh heavily in the balance for better fishing, which is the aim of the Fish Commission.

Let us consider these three phases of a comprehensive program to improve fishing separately. Of primary importance in this or any other conservation movement is the backing of the sportsman himself. Perhaps I should term it "conservation-mindedness," this apparently growing tendency of our fishermen to fish more for sport and less with the ambition for a full creel. Of the factors that presage better fishing in the future, this is outstanding. Then there is the growing tendency to improve our trout waters, bettering conditions under which the fish must live. The sportsmen's stream improvement program gained remarkable momentum last year, and this year splendid progress was made on many of the streams

throughout the state. Many of the improvement devices installed were built for permanence and should prove beneficial for trout in these streams in the future.

Nature during the past autumn provided the second factor for better fishing. During the past four years our streams and lakes in most sections of the Commonwealth were seriously affected by drought. True, our stream survey served to checkmate drought conditions to some extent, but the summer of 1934 was marked by alarmingly low stages in many of our outstanding trout and warm water streams. Then came unusually heavy rainfall, and when our trucks carried trout and warm water species of fish to approved streams during September and October, the fish were stocked under conditions that assured them better protection from natural enemies during the winter months. Included in our stocking program were thousands of trout over the legal size of 6 inches, fingerling bass, sunfish, catfish and yellow perch of sufficient size to care for themselves when placed in wild waters.

Increased production of fish at our hatcheries is a prime consideration if we are to have better fishing. Curtailment of our fishing waters by pollution and rapid increase in the number of fishermen has made one thing apparent. Our heavily fished streams and lakes must be stocked abundantly to provide good fishing. Let us now consider just how the Fish Commission is meeting this constantly in-

creasing demand. We have installed two additional units of ponds for the raising of bass at the Pleasant Mount hatchery, and a four-acre brood pond for bass at this giant fish farm. And trout? At Spring Creek in Center County we are now holding over 300,000 brook, brown and rainbow trout for distribution. These trout have developed rapidly under ideal conditions and the Spring Creek site, in addition to being a model stream improvement project, looms as one of the greatest trout producing areas on the Eastern seaboard.

But Spring Creek is not the only plant that has boosted our trout production. Huntsdale in Cumberland County rivals it, in the rapid growth of trout retained at the ponds of this new Cumberland County development. In the brief period of one year, we have developed trout at Huntsdale that attained a length of 12 inches. In girth and beauty of markings, these Huntsdale trout are without a rival in Pennsylvania-produced fish. It is our constant aim to increase production of all species of fish at our hatcheries for this increased output is essential to the success of our stocking program.

I feel confident in predicting that 1935 will go down in fishing annals as one of the best years of sport for Pennsylvania anglers.



Commissioner of Fisheries.



THE SPORTSMAN'S BACKING IS OF PRIMARY IMPORTANCE
TO ANY CONSERVATION PROGRAM

Pennsylvania Record Fish for 1934

EDITOR'S NOTE: The following article on record fish taken this year in the Keystone State by our Pennsylvania anglers is based on all reports available at the Fish Commission for the 1934 fishing season.

THE 1934 fishing season in Pennsylvania will go down in the records as producer of some of the greatest catches of giant game fish in the history of the Fish Commission. In three classes particularly, brown trout, wall-eyed pike and smallmouth bass, marks have been set this season by fishermen that may go unchallenged for years to come. And yet, the record brown trout and record wall-eye were given real runs for first honors in these divisions by other mammoth fish of both species. Let us turn back the calendar to the trout season.

A Record Brownie

High water in many of the major trout streams of Pennsylvania greeted the trout fishermen in their initial invasion of the haunts of brook, brown and rainbow trout. Despite this fact, however, a number of brown trout were taken that topped 20 inches in length. Then, on April 26th, William Zucuskie, of Tamaqua, caught the first of a trio of great brown trout that were to upset Pennsylvania records. Fishing for the first time in his life in the Still Creek dam on Pohopoco Creek, Zucuskie hooked a brown trout 27 $\frac{5}{8}$ inches in length, 16 inches in girth and weighing 8 pounds, 15 ounces. After a stiff battle, the big trout was conquered and its size caused a real stir with fishermen in that section of the state. A rather general belief existed that it would rank as the greatest trout to be taken during 1934. The catch was made on a night-crawler.

Spring Creek, in Centre County, famous for the Bellefonte trout and the Fish Commission's "Fisherman's Paradise," was to provide its sensational brown trout catch a few weeks later. John Hobba, disabled war veteran living with his sister at Milesburg, caused a flurry of excitement in Central Pennsylvania trouting circles when, fishing live bait, he landed a brownie that measured 26 $\frac{3}{4}$ inches in length, had a girth of 16 inches and weighed 7 pounds, 15 ounces. His catch was made on the stream near Milesburg.

But even then real brown trout history for our Keystone State streams was in the making in Pike County's famous Lackawaxen River. And a fly fisherman was destined to make it. Bill Percival, who lives at Matamoras, Pike County, knows the great Lackawaxen like a book. He has studied its pools and riffles and the mammoth brown trout that haunt them for many years—and he fishes for the big fellows almost exclusively. During the past season, he concentrated on Pennsylvania's record 1934 brownie several times, but each time the mammoth fish proved too wary to be hooked. A number of other trout, three and four pounders, had succumbed to the daintily floating dry fly presented by Percival during the season, but the old timer he sought apparently was destined for another year's grace. Then, in July, during the waning days of the season, it happened.

Percival was fishing with a slender four-ounce fly rod, line, leader and fly to match.



FRANK SEAS WITH HIS RECORD WALL-EYED PIKE

The mammoth trout struck and the battle was on. Did we say battle? That's not a strong enough word. For one hour, this grandfather of Lackawaxen brownies surged against the frail bamboo rod and the comparatively frail line and leader. But behind that tackle was an expert fisherman.

Finally, the mammoth fish was brought to creel, and another unforgettable incident had been imprinted in the thrilling saga of the whippy fly rod and the men who fish it. Percival's great catch weighed 9 pounds, 7 ounces. Its girth was 15 $\frac{1}{2}$ inches and length 30 inches.

Angler Honor Roll**Record Fish, 1934****RECORD BROWN TROUT**

Caught by William Percival, Matamoras, in Lackawanna River, Pike County. Length, 30 inches; Girth, 15½ inches; Weight, 9 pounds, 7 ounces. Lure used—Artificial Fly.

RECORD BROOK TROUT

Caught in Schrader Creek, Bradford County, by Bert Haines, Powell. Length 16½ inches. (No weight or girth given.) Lure used—live bait.

RECORD RAINBOW TROUT

Caught in Jordan Creek, Lehigh County, by Allen Bear of Bethlehem. Length, 19½ inches, weight 4 pounds, girth not given.

RECORD SMALLMOUTH BASS

Caught in Conodoguinet Creek, Cumberland County, by Upton Glass, Carlisle. Weight, 5 pounds, 8 ounces. (Length and girth not given.) Lure used—live bait.

RECORD LARGEMOUTH BASS

Caught in Harvey's Lake, Luzerne County, by John Warzechowski of Nanticoke. Length 24 inches, weight 8 pounds, 8 ounces. Lure used—plug bait.

RECORD PICKEREL

Caught in Peck's Pond, Pike County, by Archie J. Waidelich, Hamburg, Berks County. Length 28 inches, weight 5 pounds (dressed). Lure used—not given.

RECORD WALL-EYED PIKE

Caught in Zimmerman's Eddy on the Upper Delaware River by Frank L. Seas of Easton. Length 34 inches; Girth 18½ inches; Weight, 13 pounds, 8 ounces. Lure used—spinner and lamprey eel combination.

RECORD ROCK BASS

Caught in Warrior's Ridge dam on the Frankstown Branch of the Juniata River by Charles Berkheimer of Altoona. Length 14 inches; girth and weight not given. Lure used—plug bait.

RECORD BLUEGILL SUNFISH

Caught in Saylor's Lake, Monroe County, by Ernest Benning, Bethlehem. Length 11 inches. Weight and girth not given. Lure used—not given.

RECORD YELLOW PERCH

Caught in Allegheny River by Roy Williams of Mapleshade. Length, 18 inches. Weight and girth not given. Lure used—live bait.

RECORD BULLHEAD CATFISH

Caught in Warrior's Ridge dam, Frankstown Branch of the Juniata River, by G. W. McCauley of Bellwood. Weight, 3 pounds. Lure used—live bait.

RECORD SUCKER

Caught in North Branch of the Susquehanna River near Rupert, Columbia County, by Harry Hollenbocks of Shenandoah. Length 24 inches, weight 4 pounds, 14 ounces.

In the rainbow trout classification, the largest fish reported was taken in Jordan Creek, Lehigh County, by Allen Bear, of Bethlehem. His catch measured 19½ inches in length and weighed 4 pounds. Incomplete records as to weight and girth of the largest brook trout to be reported make this class uncertain. A brookie measuring 16½ inches caught by a boy angler, Bert Haines, of Powell, in Schrader Creek, Bradford County, was the longest brook trout recorded.



AND HERE'S BILL PERCIVAL WITH HIS MAMMOTH BROWNIE

Giant Bass

Bass fishing during the summer months, July and August, while it yielded a number of fine smallmouth and largemouth bass, did not provide the exceptional catches that were to come with the cooling of the water

in September and October. In the largemouth division, a number of fish weighing up to six pounds were taken. Then, in September, a largemouth was caught at Harvey's Lake, in Luzerne County, that dwarfed many of the prior catches. Fishing plug in the lake, John Warzechowski, of Nanticoke, had the fight of a lifetime on his hands when a largemouth bass, 24 inches in length and weighing 8 pounds, 8 ounces, struck the lure. This fish topped, by four ounces, the record largemouth reported during the 1933 season.

Generally recognized as premier game fish in Pennsylvania, the smallmouth bass this year furnished great sport. A number weighing up to four pounds had been taken during the summer months, when most rock bottom streams and lakes, range of the smallmouths, were extremely low. The Conodoguinet Creek, famous for the great girth and weight of its smallmouth bass, was destined to yield the surprise catch of the year in this division.

Fishing in the Cumberland County stream in October, Upton Glass, of Carlisle, made an unusual catch. Six smallmouth bass were taken, the largest weighing five and one-half pounds, an unusual smallmouth in any body of water. Three other bass of the catch each weighed 4½ pounds, while two exceeded two pounds apiece.

That Delaware Wall-Eye

With Lake Wallenpaupack in Pike and Wayne Counties providing truly sensational wall-eyed pike fishing this year, fishing so extraordinary that it attracted sportsmen not only from many sections of Pennsylvania but from neighboring states, it was reasonable to suppose that here the record wall-eye for the 1934 season would be taken. Five-pound pike were not at all unusual; many six, seven and even eight-pounders were caught in the most amazing inland water fishing ever afforded in Pennsylvania.

(Continued on page 10)



UPTON GLASS WITH HIS RECORD BASS CATCH

Elementary Fly Tying

By CHAS. M. WETZEL

WET FLIES

THIS and the following article are intended as a supplement or continuation, of *Native Trout Flies*, which appeared in the August, September and October issues. In those articles, the entomological side of our common stream flies was treated, while these will deal with tying the artificial. They are not intended as an elaborate treatise for the professional fly tier, but were rather actuated by a desire to assist those anglers, who have never before tied a fly, and who have aspirations along these lines.

I am not a professional fly tier, though regularly each winter, I tie a hundred or more—mainly from the fascination there is about it and to keep my stock replenished. Had I known in the beginning some of the finer points which later only came through bitter experience—how much trouble would have been saved.

It is impossible to imitate exactly any natural fly; the very thought is absurd and even if it were possible, would the trout take them in preference to some of our old reliable patterns, which are at best merely suggestions of natural insects? Sometimes I doubt it—then again after a successful day, with a fly which I have simulated closely, as to size, shape and color—former doubts are swept aside, and I became convinced, that a close imitation proves superior.

There is far more back of this fly fishing than mere surface imitation. Light reflections of the natural fly may play an important part, and who can tell how a fly appears to the trout under water? I believe that they can distinguish color, and I have had them pick out differences in flies—differences so minute as not to be readily apparent to the human eye. Bass and pike are known to be sensitive to red, as witness the success of such outstanding patterns as the Red Ibis, Paramachene Belle and others; and a small fleck of red on a trout fly, often proves the turning point from failure to success. Whether it arouses their fighting instinct or appeals to their appetites, no one knows.

After some twenty odd years fly fishing experience, I am rather liberal in my views, and can not criticize an artificial dun, drake or spinner just because its body is not elevated and reversed, like the natural insect—for these flies will take trout, and take them under such conditions that no unprejudiced angler can doubt that they are taken for their natural prototype.

An illustration of this is the artificial of the drake which I described in the August issue. This fly has generally proved more successful for me than the more exact imitation with its reversed body; yet I once had this latter fly torn into pieces by hungry trout of Penn's Creek; which all goes to prove that theories built up over this moody fish should never be indulged in.

No doubt some of you will consider it a waste of time and energy even to attempt such a tedious operation as tying a fly; but I assure you that anyone who has the patience to follow the various illustrated steps can, at the first attempt, turn out a fly which, though probably crude in appearance, will nevertheless catch fish, and not until you have actually caught a trout on one of your own creations have you experienced the greatest possible thrill in fishing.

The object of these articles is not so much in close imitation of natural insects (though suggestions will be given from time to time) as in mastering the technique necessary to turn out a fly which will catch fish; and everyone agrees that successful simulation can only be judged by the fly's fish-taking qualities. The flies we are about to tie are more or less suggestions of natural insects, as are most of our standard patterns. Many of these are creations of fancy and bear no resemblance whatever to any known insect.

Fly tying is merely a mechanical process and is within the reach of everyone; though the ability to closely imitate a fly is something that can only be acquired through experience and a study of the natural insects. In *Native Trout Flies*, the entomological side was treated; these will deal with tying the artificial; and when these principles have been fully mastered—then it will be up to you. With these thoughts in mind we will proceed.

We will first tie a grey hackle with a yellow body; and since I guaranteed your first fly would take trout, I am naturally picking out one that has a good reputation, and at the same time, one of the simplest to tie. This yellow bodied hackle is tied as a wet fly and is good, during June and July, practically throughout the state.

There are two types of hackle flies—hackles and Palmers. Palmer hackles are spirally wound full length around the body, and made fuller at the head or shoulder, while in the fly we are going to tie, the hackle is only wound on the head.

Izaak Walton, in *The Compleat Angler*, makes repeated reference to the hackles and Palmers which even today still go under those names. From what I have been able to gather, the Palmers were originally tied to represent the caterpillar of the tiger moth, while the regular hackles were designed to imitate the pupa or nymph of the natural stream flies as they were rising to the surface, ready to take to flight. This seems natural, too, when we consider that the fly has no wings.

Of late years, flies called nymphs have appeared on the market and are more exact imitations of the natural pupae. They are made in an endless variety, but the great majority are tied with a bulging thorax and have a smooth section of feather, flat over

the back—supposed to represent the partially developed wings in the pupa stage. From conversations with other anglers who have used them, and from my own personal experience, I believe that the old reliable hackles are equally as good. I hope that no one may misconstrue the above statement, for I do not mean to speak disparagingly of these nymphs. Most of them will take trout and the one that I have had the best success with is the imitation of the drake or May fly, which I shall describe in the next issue. These nymphs seem to work best when there are no natural flies on the water.

I always prefer wet flies tied with a short gut snell, as they are more readily attached to the leader. They have the objection of rusting and breaking off at the hook, but the convenience saved in attaching them, more than offsets this disadvantage. After all what do a few lost flies amount to, (that is unless they're fast to a trout) when a little later on you may be tying them by the dozen and at a cost of less than two cents apiece?

We will now proceed to form the loop in the short gut snell. First soak the gut in water to soften it, then hold loop at point A, Fig. 1 with thumb and first finger of left hand. Grasp end B with thumb and first finger of right hand and form the second loop, holding it at point A with the left hand, see Fig. 2. This will be the size of the finished loop. Then again with thumb and first finger of right hand at B, take this remaining end and lay it across and between the two loops previously formed, as shown in Fig. 3. Now from the back, reach through the first loop formed—grasp the second loop at point C, Fig. 3 and pull it through—meanwhile releasing point A and holding with left hand at B and D until loop is tightened. Fig. 4 illustrates the second loop, being pulled through the first. Trim off end B, and the loop is complete. This is a good knot; it will not slip and I also use it for forming the loops on my wet fly leaders.

Now that we have snell all prepared, we will also require a small vise (from the "5 and 10") some wax (equal parts of bees-wax and shoemaker's wax kneaded together is good) a spool of No. 00 silk thread, (from the wife's sewing cabinet,) her scissors, a red feather (from one of her old hats) hook, varnish or shellac, a strand of yellow wool, chenille or floss silk, some fine tinsel (probably off of last year's Christmas tree) and hackle, from a Plymouth Rock rooster.

I would not advise the purchase of any more equipment until after you have tied a few flies; then if you are sufficiently enthusiastic about it, such articles as a more elaborate vise, hackle pliers, etc., can be procured from time to time. I started out with equipment similar to the above, and now I have difficulty in getting all my "junk" in a good sized grip.

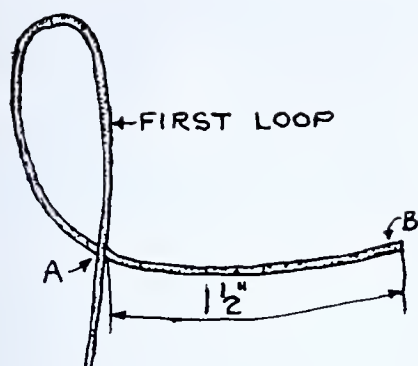


FIG. 1.

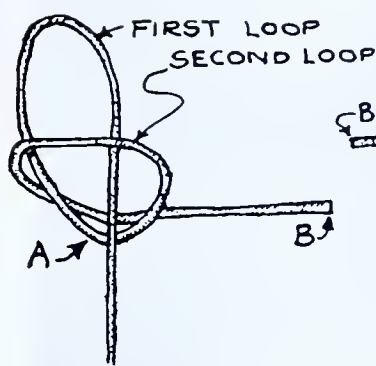


FIG. 2.

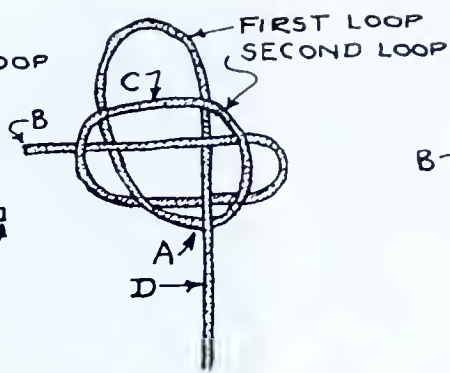


FIG. 3.

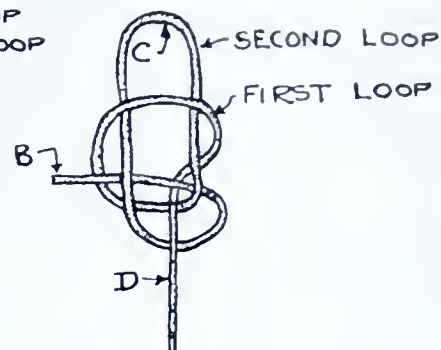


FIG. 4.

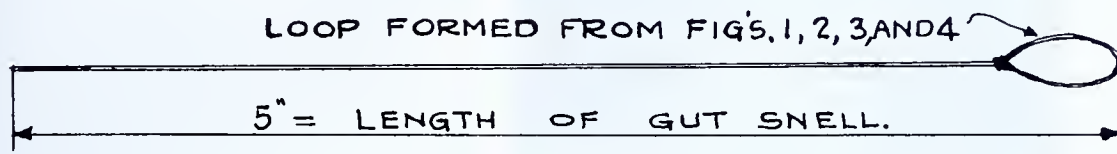


FIG. 5.

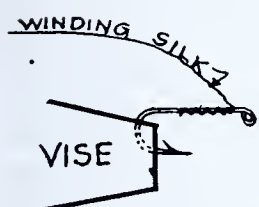


FIG. 7.

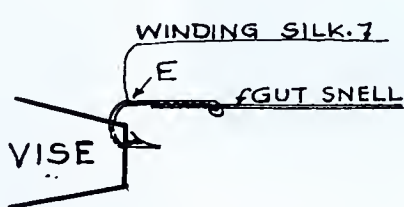


FIG. 8.

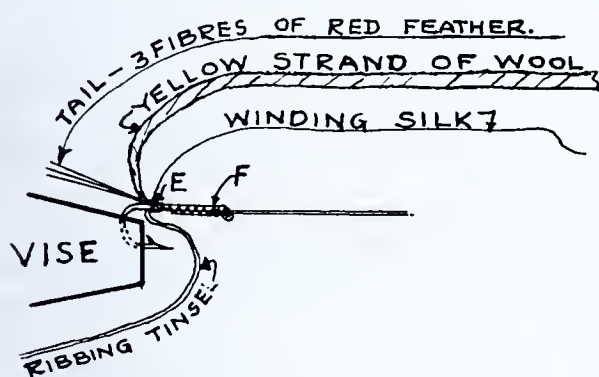


FIG. 9.

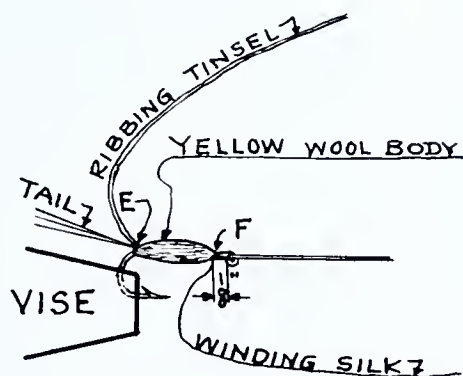


FIG. 10.

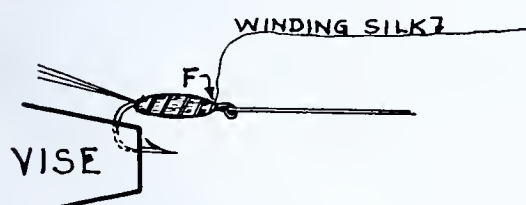


FIG. 11.

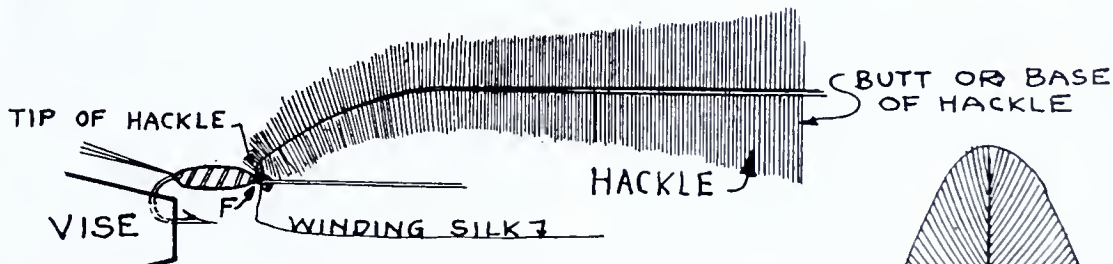


FIG. 12.

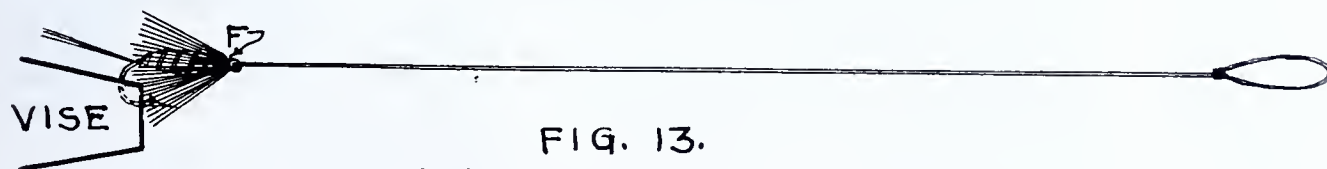


FIG. 13.
THE FINISHED HACKLE.

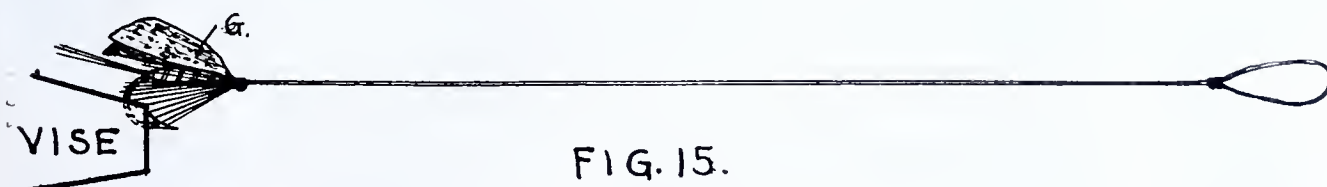


FIG. 15.
THE FINISHED WET FLY.

SKETCHES BY THE AUTHOR.

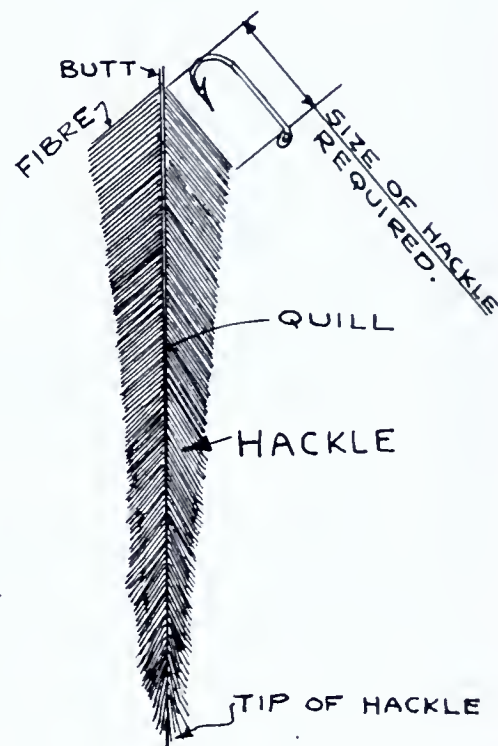


FIG. 6.

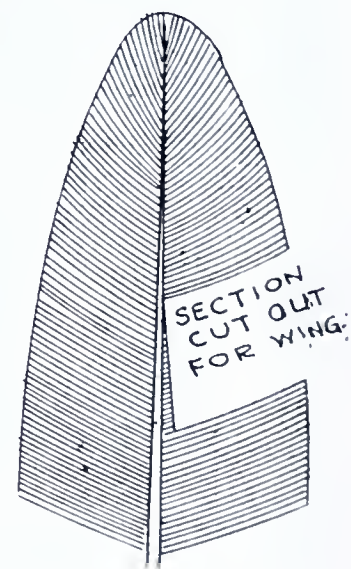


FIG. 14

The hackles are the feathers found on a rooster's neck, and on the saddle just in front of the tail. The saddle hackles make the neatest appearing wet fly but I generally use the neck feathers. Bantam roosters furnish excellent hackles for small flies. The size of hook used determines the size of hackle. I usually select my hackles so that the length of hook equals the length of fibres on the hackle, as shown in Fig. 6. The hackles should always be selected from the male bird as they are stiffer and glossier in appearance, though in the wet fly, stiffness of hackle is not essential. Select a fairly heavy hook as it sinks more readily, which it should—this being a wet fly. Now that everything is in readiness we will start tying the fly.

First wax about fifteen inches of No. 00 winding silk and with it make a few turns around the hook as shown in Fig. 7. Run end of recently completed gut snell through eye of hook, and wind it securely fast to shank, ending at point E, see Fig. 8. Cut out two fibres from the red feather for a tail and have a piece of fine tinsel about three inches long ready. The yellow wool strand should be thinned out at the end, to avoid an unsightly lump at point E.

With winding silk, lash tail fibres, ribbing tinsel and wool strand at point E, Fig. 9, making a few turns around the hook—then continue with the winding silk back to point F, where the wax on it will usually hold it in place.

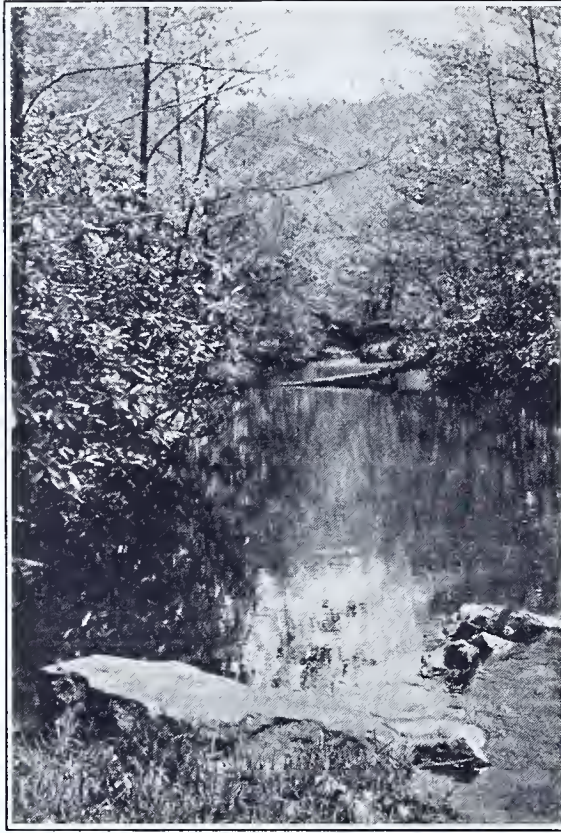
Take the strand of yellow wool, between thumb and first finger of right hand and wrap spirally around hook, forming body and holding in place at point F, Fig. 10, with a few turns of the winding silk. Then fasten with a half hitch. A half hitch is simply a loop, turned in the silk, slipped over the snell and pulled tight when in position. Be sure and keep body at least an eighth of an inch away from eye of hook, as hackle must be still wound on. Trim off surplus end of wool strand.

Next, with the ribbing tinsel, take a few turns around point E, then wind spirally around body, fastening at point F, Fig. 11 with a few turns of the winding silk and another half hitch. Clip off surplus tinsel. I generally fasten hackle pliers to end of winding silk letting it hang; this tension holds the wool and tinsel in place and the half hitches may be avoided. The body of the fly is now finished.

Strip the down from the hackle; then hold tip of hackle in right hand and with thumb and first finger of left hand strip down towards the butt, so that the fibres will stand out at right angles to the quill or lean slightly back towards the base, as shown in Fig. 12. Stripping the hackle makes it easier to wind on and the fibres will not mat or double under so quickly.

Fasten tip of hackle with winding silk at point F, Fig. 12, then wind hackle around the shoulder, fastening butt at point F with a few turns and two half hitches. Give the winding silk a sharp jerk and it will break off cleanly at the knot; but since it is quite a trick—perhaps it would be best to cut it off with the scissors. With a needle pick out the fibres of hackle which were doubled under while tying it on; and with a toothpick dipped in shellac, touch up the head.

Now the fly is complete and though your



THE HOME OF THAT "BIG BASKET" TROUT

first attempt may be somewhat ragged looking, yet it will take fish; sometimes the more bedraggled the fly, the more effective it is.

The Wet Fly (Professor)

Since we have the body material available, we will now tie a wet fly, called the Professor; the only other things necessary are a mottled duck wing feather and the rich chestnut brown hackle from a Rhode Island Red rooster.

To tie the fly proceed as in Figures 7 to 12 inclusive; from the body, wind the brown hackle on sparingly, so that it will sink more readily, as we are now adding wings which make it more buoyant. Fasten hackle at F, Fig. 12, with a few turns of the winding silk and a half hitch, leaving a space of about a sixteenth of an inch between hackle and eye of hook, to fasten on wings.

Smooth out a section of the mottled duck feather and strip the fibres between thumb and first finger of right hand until they are at right angles to the quill and present a flat surface when released. Cut out a section as shown in Fig. 14, so that the length of fibres is equal to the length of hook; fold this over once, making it double, with concave sides in or together.

Grasp wing between thumb and first finger of left hand at point G, Fig. 15, so that butt of wing fibres rest above and slightly straddle eye of hook; then hold wings firmly to prevent slipping, and with winding silk take a few turns around hook—lashing wings securely in place and fastening with two half hitches. Trim off the excess butt end of wings at eye of fly; touch up the head with shellac and the fly is finished.

I trust that I will not bore my readers by relating a personal incident which illustrates the comparatively low esteem in which I am lately held as an angler by members of my immediate family. There was a time when my reputation as a fly fisher was

above reproach but not liking to extol my past ability, I shall pass over this period briefly and hurriedly; yet there is a subtle and pleasant satisfaction in basking in the glow of past glories.

A few years ago, I bought a fish basket. Not an ordinary basket by any means, but one of roomy and generous proportions, far exceeding in size any which one ordinarily encounters. Among its other requisites, it was purchased with a critical eye to comfortably house an immense trout which I have been fishing for for years. Should the photograph of this creel with the old cannibal trout draped over it, ever appear in the ANGLER—be slow in forming an opinion of the fish's size.

In search of extenuating circumstances which account for my present lamentable failure in "bringing home the bacon," I must blame it first on a study of the natural insects; and second, on concentrating on this old brown trout, whose capture I fondly hope will restore my lost prestige, thereby making my triumph complete and soul satisfying.

On the return from my last trout fishing trip, this summer I was met at the door by my seven year old son "Skippy," who by the way deftly wields a fly rod with both hands and in my presence professes to be a purist—one of the purest of the pure; yet when out of sight and fishing with his mother stoutly affirms that "flies are no good, and worms are the only way to catch 'em."

The conversation as I recall it opened up with the usual salutation:

"Well, what luck?" Skippy demanded eagerly.

Father talking: "Boy, I laid 'em low this time!"

"Let's see them quick," he urged. "Did you get the big one?"

Here I assumed my most mysterious air and the suspense becoming terrible, he commenced to unfasten the lid of the creel. Assisting him, I proudly withdrew from its spruce lined cavernous depths three small trout who succumbed to the deadly dun I had labored long over during the past winter. Disappointedly turning to his mother and pointing an accusing finger at me, he exclaimed: "There he is! He's been fooling with those flies again!"

A Sudden Drop

Everett Green, of Green Hill, according to Warden Del Broadbelt, Pocopson, is such an expert fisherman that it may be possible his angling ability could seriously affect the water supply of a southeastern Pennsylvania community.

Del writes that Green secured permission to fish in a certain dam on Chester Creek. He landed three largemouth bass in the granddaddy class. Two of the big fellows tipped the scales at 5 pounds apiece, the other at 6 pounds. The next day, Everett is said to have had word that he could no longer fish in the dam.

"His taking those three fish out," opines Del, "had lowered the water so much they were afraid if he kept fishing there wouldn't be enough water there in case a fire broke out in town."



Seth Says

'Tain't allus fancy fishin' rigs thet takes speckled trout. Mebbe I'm sort o' sot in my ways, but I reckon there's a heap o' fun an' fairness in goin' out

inter the gap, cuttin' a switch, an' ketchin' a mess o' mountain trout. A feller don't need fancy riggin' ter git a kick out o' fishin' even ef his rig ain't new an' costly. Now, jest to back my say, look at old Jake Tolley thet lives over in Rattler Gap.

I figger there ain't many fellers kin touch old Jake when it comes ter knowin' the mountains. He ain't missed many years without his turkey, an' in trout fishin' he takes his share. I ain't never knowed him ter take more'n he needed, neither. Well, sir, last spring along comes a feller thet knew Jake when he was a boy, and this feller was all rigged out with the best o' fishin' togs—new rod, reel, boots, an' all. Jake ain't much ter work when there's a chance ter fish, so he goes with his buddy up inter the gap. When they comes ter the run, Jake asks his buddy which way he wants ter fish. Upstream, says he, but where's yer tackle, Jake. Well, sir, Jake fishes around in his pocket, pulls out a hook an' some heavy thread, cuts him a switch, an' he's ready ter start.

'Bout two hours later they meet, an' Jake's friend only hes two mountain trout. Jake hes ten dandies, plenty fer enny man. Now mebbe thet other feller ain't goggle-eyed. 'Course, he can't figger thet Jake could worm his way inter those brushy holes jest about like a bobcat. Knowin' the water, I reckon, is over half o' fishin', and a feller kin hev real sport no matter ef his outfit cost a few cents, er a hunderd dollars.

BELIEVES EDUCATION IS KEY TO BETTER FISHING

The following interesting communication is from Charles H. Goepel, Jr., special fish warden of Philadelphia. He writes:

"As an ardent fly fisherman and a deputy warden, I have spent many warm days fishing and wading the Little Neshaminy Creek from above Willow Grove outside of Philadelphia down to where this creek empties into the Big Neshaminy around Rushland. This stream is full of smallmouth bass and offers unusual sport to the fly fisherman.

"The smallmouth bass is a real temperamental fellow and hard to lure on a fly but the little fellows are easier to attract and break the monotony from time to time. The early morning and dusk fishing is the best and altho the inexperienced angler will endeavor to cover a lot of ground at these times, I have learned to work UP slowly casting cautiously into the ripples and pools and before moving to give the likely-looking pools one more try since the first or second cast probably just about excited him enough to hit your fly on your last or final cast. If any rise happened and you missed, go away and try again five or ten minutes later and he will hit again.

"It's wonderful to know a small bass



ANDREW BULNA, PITTSBURGH,
CAUGHT THIS 7½ POUND PIKE
IN FRENCH CREEK

stream so close to a big metropolitan area like Philadelphia and a number of fishermen know this secluded stream. Hence I patrolled the stream many days the past summer and fall in the late morning and afternoon to check up on who fishes, with what, etc. There you will find men and boys who fish for sport, some to put meat on the table and others who just pass time. I have found most men on the stream Thursday and Friday to get fish for Friday's mealtime.

"At our club meeting, I have often heard the remark, 'This guy Goepel is a warden but I never heard of him making an arrest.' Well, I find kindness and sportsmanship go hand in hand and the fellow who fresh water fishes is not a hardened criminal. My real efforts have been to teach young America how to respect the law and others who don't know and should by taking away their tackle and fish. I give them a copy of the law and then if I ever catch them again the law must take its course, and thus I have made a lot of friends and no arrests.

"I am of the firm opinion that education will win more people who violate than arrests. If every stream is patrolled at times during the season there will be more respect for the fishing laws and more fish in the streams. The streams near a big city need some attention during the season and therefore I believe we should have more deputy wardens—honest fishermen who are real sportsmen.

"During the last season I have turned many bait fishermen into fly fishermen by showing them the simple art of fly fishing. Of course, bait fishermen will always remain with us since carp and catfish seldom rise to a fly and we must clean out those big carp that inhabit the deep pools. Also the suckers in the spring and fall will not jump at your fly but will suck up your dough bait.

"The best catches in this creek have been reported in the late afternoon before dark when the bass feeds before dark. I did land some beauties, one in particular. I fished a stretch of about 200 yards without any suc-

cess, then I did what any fly fisherman would do—changed the fly. I put on a swift water streamer fly which requires quicker action and the second cast quickly brought a rise, a little fellow. But where there are little ones there are big ones, too, so ten feet up the creek a big fellow hit my fly—Boy, says I, here's my breakfast.

"He hit me so fast that I lost hold of my slack line and before I could catch my hand on it again he leaped twice and threw the hook or fly from his mouth. The excitement that I was waiting for had come and gone with my words—'Boy, here's my breakfast,' but, in retrieving my line for another cast, I learned that this bass was again snagged in the belly by the hook on my fly and I brought him to my net. He weighed two and three-quarter pounds and what a breakfast he made my pal and me!"

BUCK TAILS FIGHT STREAM POLLUTION

From M. M. Kaufman, of Clarion, Pa., comes word that the Clarion County Buck Tails are taking an aggressive part in the drive against stream pollution. As chairman of the By-Laws Committee, Mr. Kaufman reports that favorable replies were received from all of the candidates for state and national office this autumn to the following resolution and questionnaire:

"As soon as name is announced in newspaper or newspapers by any and all candidates for United States Senator or Congressman for this district; For Governor of Pennsylvania; State Senator for this district and Assemblyman from Clarion County, or candidates for any other legislative, executive or law enforcement office, in this district, the Secretary shall publish the following in the *Clarion Republican* and the *Clarion Democrat*, and mail a copy to such candidate or candidates also mailing copies to the *Oil City Derrick*, *Sun-Telegraph* or other daily in Pittsburgh and at least one daily or weekly newspaper published in New Bethlehem, Brookville, Tionesta, Ridgway, DuBois and Kittanning, requesting publication without cost to our association, to wit:

"Mr. (or Mrs.)..... you have announced your name for the office of

"If elected to the office will you at all times vote for and use your influence and best endeavor to pass laws and aid in enforcing present laws to stop pollution of the Lakes, Rivers, Brooks and Springs of the State and particularly the Clarion River and its tributaries?

"Please answer in the *Clarion Democrat* or the *Clarion Republican* in the next week's issue, addressing your reply to the 'Buck Tails Association of Clarion County.'"

STOCKED TROUT SPAWN IN TIOGA STREAMS

Writing in November, Warden H. P. Boyden, of Wellsboro, Tioga County, reported trout waters in his section up to good levels for the winter months. Autumn rainfall proved a real boon to trout streams of the North Tier.

Small game hunters, he reported, had observed many trout spawning. Some of the trout are believed to have been stocked in October and by the next month had joined the annual upstream migration.

The Angler's Responsibility

A Frank Discussion of a Vital Problem

By **KENNETH A. REID**

Member, Board of Fish Commissioners

TROUT fishing in Pennsylvania has reached a critical stage, as it has in practically all other populous states where the fishing is very intensive. Conditions are not the same as they were when we were boys and we might as well face this fact squarely and act accordingly. Today there are at least twenty men on the streams for each one of twenty years ago, and I believe the man days of fishing exceed this ratio, for many of these fishermen have more time to fish on the streams throughout the season. Contrasted with this tremendous increase in fishing, the mileage of fishing water has been progressively decreased by pollution and other agencies of our so-called civilization and much of that remaining is so impaired that it is not capable of providing food and cover for as many fish as it formerly did. And finally, we have had five successive years of drought that has practically wiped many of our trout streams off the map. The result is a perfectly natural and logical one: fishing on the remaining mileage has become so intensive that the supply of fish is continually kept down to a minimum.

I have singled out trout streams in this discussion because the factors governing them are somewhat different from those governing bass waters. While very intensive fishing will impair any type of fishing, it does not reduce the supply of bass and other warm water fish to the extent that it does trout. A mile or two of our larger bass rivers like the North Branch of the Susquehanna or the Allegheny will hold more fish than the entire length of most of our trout streams. Furthermore, bass are not such persistent feeders as trout. There are often days at a time when for reasons best known to themselves they elude the angler's offerings so that they are better able to take care of themselves under intensive fishing. Natural reproduction also seems to be higher and the drought seems to have had little adverse effect on our bass waters.

What is the answer to this crisis in trout fishing that we are facing? Your Board is and has been producing and planting for many years all the trout that its funds, derived from your license fees, will permit, and in many cases this has been more than the streams could adequately provide with food and cover. The production and planting of trout is already far ahead of other factors in the problem. Intelligent stream improvement will help matters by increasing the carrying capacity of the streams and improving their condition for both growth and natural reproduction of trout.

But there are other factors in the problem, and one of vital importance is the Fish Code, which regulates both your fishing and the activities of the Board. This is an antiquated instrument drawn up years ago to suit conditions of a past generation and it is hopelessly inadequate to cope with the actual

conditions confronting us today. An earnest effort was made during the last session of the Legislature to have it modernized by the enactment of conservation measures badly needed to cope with the intensive fishing of today, but in spite of the complete agreement between the Pennsylvania Federation of Sportsmen's Clubs and the Fish Commission on the needed changes, as embraced largely in bill No. 1567, this bill was amended and butchered so badly that in its final form it was a liability rather than an asset and had to be killed.

Under the Fish Code, your Board does not have the power to change creel limits, size limits, season limits, or to act on other conservation measures as the need becomes apparent from time to time as does your Game Commission. If, for instance, we want to change the creel limit on trout, we must have an act of the Legislature to accomplish it. This naturally puts the Board of Fish Commissioners at a distinct disadvantage in hampering action along lines that are obviously necessary. Rather than seek specific changes from the Legislature on each one of these minor parts of the Code, it is vitally necessary that we seek to have passed in the next session a bill that will so amend the Fish Code that the Board of Fish Commissioners may make these needed changes themselves from time to time, as is now done by the Game Commission under Section 509 of the Game Code.

Getting back to trout fishing, let us look at the provisions of the Fish Code. The

daily creel limit is twenty, there are 92 days of open season and there is no season limit. Each fisherman is legally entitled to take 1840 trout from our streams each season. With some 300,000 odd fishermen, this would mean a grand total of 552,000,000! Contrast with this preposterous number of trout that our laws permit to be taken each season, (if anything like this number could possibly be found) the annual output of our hatcheries, which in trout of legal size and above is approximately 1,000,000—less than one-fifth of one per cent! Also consider the fact that each resident license will only pay for producing and planting from one to ten of these fish per season, depending on the size.

Creel limits are supposed to be conservation measures by limiting the catch in keeping with the supply of fish and the intensity of the fishing. When they are so ridiculously high that the angler is indeed fortunate if he has the opportunity of reaching them once or twice during the season, they do more harm than good. They merely challenge the uninformed fisherman to strive for this number as a false "par on the fishing course," and failing miserably of attainment, he is more disgusted with the fishing than if the limit were so low as to be easily attained.

There is no use temporizing about the matter. The simple fact stands out that *we cannot continue to take from our trout streams anything like the present number of fish if we would have decent fishing.* Nature has placed definite limits on the carrying capac-



TWENTY MEN ARE ON OUR STREAMS TODAY TO ONE OF
TWENTY YEARS AGO



**DROUGHT AFFECTED RADICALLY
MANY OF OUR MOUNTAIN
STREAMS**

ity of the remnant of streams that man's selfish activities has spared, so that no amount of additional stocking with large trout would materially change the situation, even if we had a \$10.00 license to make greatly increased stocking possible. With the present limitations of the Fish Code (which amount to practically no limitations at all as far as numbers are concerned) and with the bulk of the fishermen putting into their creels all that they can catch, they will continue to take the trout out of our streams faster than Mother Nature and the Board combined can put them in.

It is not enough merely to "obey the law." The real sportsman will go farther and obey the law of common sense which will tell him that if he takes from the streams during the entire season a greater number than is now permitted in the daily creel limit, he is taking more than his share of the annual crop and in so doing is impairing the sport for himself and his fellow anglers. He will not wait for the law to force him to reduce his take, but will set an example for the law and others to follow. He will fish with the artificial fly so that the danger of injury to the fish he returns will be minimized and he will keep only an occasional exceptionally large fish. He will tolerate neither the pot fisherman, nor the vainglorious egotist who delights in bringing home a "nice mess of fish" as evidence of his prowess. He will realize that neither of these have any place in the present day picture and through his organizations will socially ostracise them as enemies of all true sportsmen and the worst sort of vermin.

Restrictions in the take of wild life are usually associated with curtailment of the sport. It is necessarily so in hunting, for a piece of game to be shot and bagged must necessarily be killed and cannot be released alive to furnish future sport. But it is not so with fishing where one can have all the

sport of taking the fish without the necessity of killing it. There need be no curtailment either as to numbers or season in the catching of fish, but merely in the killing of these fish after one has enjoyed all the sport of taking them. As a matter of fact our sport will be immeasurably improved if we omit this anti-climax in the capture of trout, for there will be more and larger fish in the stream to be taken. There is no valid excuse for anyone claiming the classification of sportsman to kill any considerable number of trout, when by this action he is plainly impairing the sport.

Mr. Trout Fisherman, the problem is squarely up to you. Your own behavior on the stream is a more potent factor than all others combined in determining the future quality of the trout fishing you will enjoy. Bluntly stated, it is a question of meat versus sport, and any sane person with trout fishing experience knows that there is not enough trout meat to go around without keeping the sport down to bed rock. After all, *isn't it rather silly and uneconomical to catch and kill for food a game fish that is worth from \$5.00 to \$10.00 a pound*



**THREE NICE TROUT ARE A FAIR
DAY'S CATCH**

as sport, when we can buy equally good fish food in the market for a few cents a pound?

Sportsmen, we are facing a crisis that demands intelligent leadership. Don't wait for others, but set an enlightened example for others to follow to a higher standard of sportsmanship—which after all must be the final answer to improved fishing in Pennsylvania. Last year I carried a creel so shallow that it would not hold more than four good trout. This coming year, *I am going to leave the creel at home!*

Honesdale Fishermen Rely on Barometer

Believe it or not, fishermen up in Honesdale, Wayne County, have the jump on just about every other angler in the state. Reason? They have a fisherman's barometer, and Waltonians in this angling paradise in Northeastern Pennsylvania are staunch in their belief that it seldom fails. Briefly, this barometer is a gold fish pool located in Central Park across from the Court House in Honesdale. Now let us visualize a typical fishermen's confab.

"Come on, Bill, let's go fishing this afternoon."

"Well, Joe, I'd like to, and could, in fact. But just a minute. Have you checked on the gold fish pool?"

Without further ado, Bill and Joe head for this unfailing guide. On this particular day, the fish are active, moving about in a lively manner. There are 25 of them, big fellows ranging in size from 10 to 15 inches. The barometer is right so a-fishing go Bill and Joe. And chances are they'll return with good catches.

Now, concerning the other side of the picture. If those pet goldfish are huddled together and inactive, chances are 20 to 1 that Bill and Joe will postpone their fishing trip to await more favorable omens. For years, this system has served the anglers of Honesdale and, it is said, served them exceedingly well.

Fishing, you know, in Wayne County is a major sport, for with its many lakes and streams, this section of Pennsylvania is second to no other as an angler's happy fishing area.

DYNAMITERS CAUGHT

Just about the lowest trick that can be termed contemptible is the dynamiting of a fishing stream. For dynamiting destroys every vestige of life in a pool, and a man who will resort to a practise of this kind is an enemy to every sportsman in Pennsylvania.

It is therefore exceptionally good news when any individual guilty of this crime, for crime it is, is caught and penalized. H. P. Custard, Special Fish Warden, at Stroudsburg, recently sent us the following clipping from the *Stroudsburg Sun*:

Fines of \$100 each, and costs of \$18.50 each, have been paid by two men who were found guilty, at a summary hearing before Justice of the Peace Ralph Booth, of East Stroudsburg, on charges of unlawfully placing explosives in public waters in Monroe County.

The fines have been paid, records at Harrisburg reveal, by both of the men, Calvin Reeves Frantz, of Stroudsburg, R. D. 3, and Alfred L. Miller, of 196 Brodhead Avenue, East Stroudsburg.

The two were arrested September 5th, by H. P. Custard, special fish warden, and given a hearing September 6th. It was alleged they had dynamited Pocono Creek, about a mile south of Bartonsville.

RECORD FISH

(Continued from page 3)

That this great fishing ground should furnish one of the largest fish in the wall-eye division was therefore in the almost natural run of events. Fred Spogen, of Lehigh, caught it, a pike measuring 31 inches in length, with a girth of 17 inches and weight of 11¼ pounds. In the opinion of veteran fishermen at Wallenpaupack, it was the largest game fish ever to be taken on the lake.

Now let us turn to the Upper Delaware River. Glancing through our records we are almost tempted to adopt the slogan for this stream—"When bigger wall-eyes are to be taken in Pennsylvania, the Upper Delaware will provide 'em." Last year, for instance, a great pike tipping the scales just one ounce short of 12 pounds, topped the list of wall-eyes, and it came from the Upper Delaware. And this year? Here's introducing Frank Seas, 1906 Butler Street, Easton, the angler who landed 1934's record-breaking wall-eyed pike from Pennsylvania waters. Following is his account of the catch, written to Fish Warden Frank Brink, of Milford.

"My brother, Ray Seas, of Martins Creek, told me recently that he was talking to you concerning the large pike that I caught in the Delaware this year. Believe me, it was some fish! I had lost several big fish in the past three years and I could not figure why I could not land them or even get to see them. I always used 30 pound test line, steel wire leader, the best of swivels, heavy hooks and strong spinners with lamprey eels for bait. However, after I landed that fish and saw the size of him—well, then I knew why they always tore loose.

"I was with William Jackson and Clyde Hester, both of Easton, when it was caught; Jackson and I were in one canoe, Hester in

another. Jackson finally netted the fish for me after I had played him for 15 minutes."

This giant of the wall-eyed pike or Susquehanna salmon species was caught at Zimmerman's Eddy on the Upper Delaware on August 11th. When weighed at the W. T. Long Sporting Goods Store, in Easton, it tipped the scales at 13 pounds, 8 ounces. It was 34 inches in length and had a girth measurement of 18½ inches.

Other Big Fellows

Good catches of pickerel were made in many waters during the season. Topping them all, reports indicate, was a pickerel measuring 28 inches in length and weighing 5 pounds dressed. It was taken in Peck's Pond, Pike County, by Archie J. Waidelich, of Hamburg.

Some fine rock bass were caught. Largest in this division was a rockie 14 inches in length, and old timers will tell you that a rock bass of that size is some fish. So broad and heavy in girth are these fish that one of 14 inches is bound to arouse comment in any fishing circle. No girth or weight was given for the fish, which was taken on a plug in the Warrior's Ridge Dam on the Frankstown Branch of the Juniata by Charles Gerkheimer, of Altoona.

A bluegill sunfish caught by Ernest Benning, of Bethlehem, in Saylor's Lake, Monroe County, measured 11 inches in length and was the largest reported of this species. Girth and weight of the fish was not given.

A yellow perch taken in the Allegheny River by Roy Williams, of Mapleshade, was the largest reported. It was 18 inches in length. The largest bullhead catfish weighed 3 pounds. It was caught in the Warrior's Ridge Dam by G. W. McCauley, of Bellwood, Blair County. A giant sucker, 24 inches in length and weighing 4 pounds, 14 ounces

topped the sucker catches. It was landed by Harry Hollenbocks, of Shenandoah, in the North Branch of the Susquehanna River near Rupert, Columbia County.

MALE BASS "DADDIES" TWO SEPARATE BROODS

Spawning habits of the black bass, game fish supreme of Pennsylvania's waters, are studied with keen interest at Pleasant Mount hatchery where thousands of the young bass are raised to stocking size. At approach of the spawning season, a certain number of brood fish are allotted to each brood pond. Last year the bass were placed in these ponds in three allotments with intervals of about five or ten days between each allotment. The first allotment had spawned, the eggs had hatched, and the baby fish were still on the nest when the last group of adult bass were released in the pond.

The females of the second group were all fully ripe and little time was available for them to choose a mate. Apparently they chose the first fish at hand, with a result that one female extruded her eggs upon a nest of young bass, and they were fertilized by the male which already had one family under his care.

When the fry already hatched rose from the nest, they were removed by the caretaker and placed in the nursery ponds. The second family was also hatched in due time under protection of the male. It is a known fact that a female bass frequently mates with more than one male. This is generally accomplished by extruding a portion of her eggs on the nest of one male bass, and then seeking another fish. However, the instance mentioned is the first observed where a female sought a male bass that already had a brood of young fish under his care.

CONODOGUINET BASS

Autumn fishing on the famous Conodoguinet Creek, in Cumberland County, furnished some catches of unusually large smallmouth bass, according to Warden George James, of Carlisle. McClay Gibson, Carlisle, scored with a 4½ pound bass, Ray Horn, Carlisle, with a bass weighing 4¼ pounds, and Clyde Gibson with a three-pounder.

AN OCTOBER CATCH

Jake Babec, of Harrisburg, recently had an experience that typifies the run of luck of more than one bass fisherman. Early in the morning of October 17th, Jake maneuvered his boat into position in a favorite fishing pool of the Susquehanna River at Harrisburg. He had with him a good supply of live bait and, as the day appeared ideal for fishing, expected a strike in short order. The strike, however, was not forthcoming.

He fished until one o'clock in the afternoon, and then anchored on the edge of a deep channel. Three hours packed with action followed. He creeled in that time one largemouth bass weighing 3 pounds 11 ounces, 8 smallmouth bass ranging in weight from 2½ to 3½ pounds, a 22-inch wall-eyed pike weighing 4 pounds 9 ounces, a sunfish and a ruffle chub. When dressed, the entire catch weighed 22½ pounds, according to Warden Frank Sanda, of Steelton, who reported the catch.



MRS. FLOYD BAKER OF DUNMORE WITH A NICE CATCH OF WALLENPAUPACK BASS AND PIKE



THIS BROWN TROUT BROKE LINE AND LANDING NET FOR RAYMOND MINICK, CAMP HILL, AND WAS LANDED HALF AN HOUR LATER

"SWUNK"

"The fish that 'dry out' so much of their weight before they get to the scales," says Dr. Thomas E. Winecoff, Game Commission official, "remind one of the darkey who caught a forty pound catfish in a Mississippi Valley stream. Rastus staked out the monster on a plough line in running water, and hurried off to call his friends not only to see his fish but to help him carry it home.

"But while he was gone another fisherman, with less luck but more muscle, took the big fish and left on the line in its place a miserable little catfish some six inches long. When Rastus got back with his friends and with proper impressiveness pulled in his fish, all he could say was, My Lawd, but ain't he 'SWUNK?'"

THE FIRST BIG ONE

*White clouds driftin' in the west,
Sun's up in the sky,
Swallows tip the water,
With wings as they fly.*

*Babbling brook flows gently on,
Shadflies are a mopin',
O' trout hidin' neath the bank,
With his eyes wide open.*

*Line goes curling thru the air,
Fly lights on the water,
O' trout makes a sudden rise,
Jes' like he oughter.*

*Down thru a pool he goes,
Where the water's deepest,
You follow'n after him,
Where the bank is steepest.
Down o'er a little fall,
Then across the shallow,*

Strange Catches

When it comes to unusual catches, those reported recently by John Jesscavage, secretary of the Thornhurst Sporting Club at Miners Mills just about top the list. He writes:

"I read PENNSYLVANIA ANGLER every month and find it interesting, helpful and entertaining.

"At different times I notice accounts of unusual catches made by fishermen. This prompts me to send in a few accounts of unusual catches made by fellow club-members on the Lehigh River in Buck Township, Luzerne County, near our club-grounds. They were told around the club-house, and although they sound 'fishy' they were all proved to be true.

"These unusual catches follow:

"A member was fishing for brown trout late one evening in June, using a 5-inch chub for bait. After a short time, he returned to camp for some forgotten article leaving his pole and line, with chub attached, on the bank of the river. On his return he found the tackle missing. Upon investigation, the pole was found wedged against a clump of brush, the line stretched taut and something pulling on the other end. Calling me, we both made an inspection and to our great surprise found a large house-cat had swallowed the chub and hook. Deciding it was a stray cat we soon sent it where all bad cats belong.

"One rainy day my brother was fishing around a shallow bend in the river, using a minnow for bait. Suddenly he felt a hard jerk on his line. He immediately set the hook and began reeling in the line. Finding it difficult to do this he pulled the line in hand over hand, and found a crane on the end of the line. A difficult time was had freeing the bird.

"On another evening, a member was casting his fly over the water. Suddenly something grabbed the fly in midair and fell to the ground. It proved to be a bat.

"But here is the best one: A friend was fly-fishing a long smooth stretch of the Lehigh one July morning. Heavy brush covered both sides of the water. On one of his casts, just when he was about to place the fly on the water, a deer bounded into the water and in some unexplainable manner the fly was imbedded in the deer's body. The deer did not stop to argue but kept on going for parts unknown with the fly, leader and the biggest part of the line."

*Racin' for his very life
Where you cannot follow.*

*Line goes a spinnin' out,
Then it starts to slacken,
O' trout take it in his head
To do a little backin'.*

*Now o' trout he's off again,
This time at you comin',
Now he's off the other way,
O' reel is a-hummin'.*

*Back and forth he's playin' now;
Now he parts the water,
Ripples dancin' all around,
Jes' like they oughter.*



FRED KING, WATERFORD, WITH A LAKE LEBOEUF MUSKIE HE CAUGHT

SOME CATCHES!

Four brown trout averaging better than 18 inches apiece were taken from Fishing Creek, Columbia County, early in May, writes Warden Myron Shoemaker. Charles Mosteller, of Bloomsburg, was the lucky angler, and he staged his unusual catch in Edson's Dam at Benton.

The big trout had a total length of 69 inches, and the largest measured 20½ inches in length. Talk about uniform size, it's hard to beat this catch of brownies.

But just to show you that Fishing Creek also furnishes exceptional fishing for brook trout, here's a catch of brookies made at Grasmere Park, on June 11th, by Peter McHenry, also of Bloomsburg. McHenry's creel of 20 brook trout ranged in size from 8 to 14 inches, and many of them were 11 and 12 inches in length.

Bloomsburg anglers certainly are doing their stuff this season.

*Now you draw him closer in,
Coaxin' and a-pettin',
Ripples start around again
As he goes to frettin'.*

*Now he's kickin' in your net,
A great big speckled rounder,
You're tickled most to death—'cause
You've caught your first two pounder.*

—H. B. SHATTO.

The heaviest brown trout taken on fishing tackle weighed 28½ pounds, it is claimed, and the record rainbow trout caught on hook and line weighed 26½ pounds.

OCTOBER STOCKING TOPS 2,600,000

The month of October marked a peak for the year in the stocking program of the Fish Commission. A grand total of 2,625,431 fish and frogs were distributed to waters in excellent condition for stocking. Of this number, 58,250 were fingerling bass, 458,290 catfish, from 2 to 9 inches, 1,359,200 fingerling sunfish, 136,700 minnows, 2,716 adult pickerel, 7,755 yellow perch fingerlings, 27,360 brown trout from 8 to 11 inches, 15,300 brook trout, 6 to 12 inches, 1,860 suckers, averaging 5 inches in length, and 558,000 frogs in the embryo stage. The various species stocked had a commercial value of \$138,431.35.

Following are the waters in the various counties to which the distribution was made:

Adams—trout, Conococheague Creek, Conewago Creek, East Branch Little Antietam Creek, Toms Creek; catfish, Marsh Creek, Little Marsh Creek, Conewago Creek, Bermudian Creek, South Branch Conewago Creek; sunfish, Bermudian Creek, Conewago Creek, Little Marsh Creek, Marsh Creek, South Branch or Little Conewago Creek; frogs, Marsh Creek, Little Marsh Creek, Bermudian Creek, Conewago Creek, South Branch or Little Conewago Creek; suckers, Marsh Creek.

Allegheny—catfish, Scott Pond No. 1, Scott Pond No. 2, Scott Pond No. 3, Allegheny River; frogs, Allegheny River; sunfish, Scott Pond No. 1, Scott Pond No. 2, Scott Pond No. 3, Allegheny River.

Armstrong—catfish, Allegheny River; frogs, Allegheny River; sunfish, Allegheny River.

Beaver—catfish, Little Beaver River, North Fork Little Beaver River, Brush Creek; frogs, Little Beaver River, North Fork Little Beaver River, Brush Creek; sunfish, Little Beaver River, North Fork Little Beaver River, Brush Creek.

Bedford—trout, Wills Creek, Buffalo Creek, Cumberland Valley Run, Raystown Branch Juniata River; catfish, Bobs Creek, Dunning Creek, Wills Creek, Gordon Lake, Thomas W. Koon Lake; frogs, Bobs Creek, Dunning Creek, Wills Creek, Gordon Lake, Thomas W. Koon Lake; sunfish, Bobs Creek, Dunning Creek, Wills Creek, Gordon Lake, Thomas W. Koon Lake.

Berks—trout, Mill Creek, Furnace Creek; catfish, French Creek, Monocacy Creek, Naftzinger Mill Dam on Mill Creek, Reisers Dam on Seidels Run, Sacony Creek, Long Pond on Lehigh Creek, Little Swatara Creek, Conestoga Creek, Cacossing Creek, Maiden Creek, Pidcock Creek; sunfish, Monocacy Creek, French Creek, Maiden Creek, Tulpehocken Creek, Cacoosing Creek, Sacony Creek, Long Pond on Lehigh Creek, Conestoga Creek, Little Swatara Creek, Naftzinger Mill Dam on Mill Creek, Reisers Dam on Seidels Run; frogs, Naftzinger Mill Dam on Mill Creek, Reisers Dam on Seidels Run, Little Swatara Creek, Conestoga Creek, Long Pond on Lehigh Creek, Sacony Creek, Monocacy Creek, French Creek, Cacoosing Creek, Tulpehocken Creek, Maiden Creek; yellow perch, Sacony Creek, Long Pond on Lehigh Creek, Cacoosing Creek, Tulpehocken Creek.

Blair—trout, Piney Creek, Clover Creek, Pine Creek, Frankstown Branch Juniata River; catfish, Williamsburg Dam on Frankstown Branch Juniata River, Frankstown Branch Juniata River, Brush Creek; frogs,



JUNIATA RIVER ABOVE PORT ROYAL, JUNIATA COUNTY

Williamsburg Dam on Frankstown Branch Juniata River, Frankstown Branch Juniata River, Brush Creek; sunfish, Williamsburg Dam on Frankstown Branch Juniata River, Frankstown Branch Juniata River, Brush Creek.

Bradford—black bass, North Branch Susquehanna River; catfish, North Branch Susquehanna River, Mountain Lake, Herrickville Rod and Gun Club Pond, Sugar Creek, Wesauking Lake, Nephawin Lake; minnows, Nephawin Lake; pickerel, Nephawin Lake; sunfish, North Branch Susquehanna River, Mountain Lake, Herrickville Rod and Gun Club Pond, Sugar Creek, Wesauking Lake, Nephawin Lake.

Bucks—catfish, Three Mile Run, Pidcock Creek, Brock Creek, Pine Creek, East Swamp Creek; sunfish, Pine Creek, Three Mile Run, Brock Creek, Pidcock Creek; frogs, Pidcock Creek, Brock Creek, Three Mile Run, Pine Creek.

Butler—trout, Hogues Run, McMurry Run, Thorn Creek.

Cambria—catfish, Clearfield Creek, Lake Rowena, New Borough Dam, Slatelick Creek, Walters Dam on Beaverdam Run, Chest Creek, Shaft Dam, North Branch Little Conemaugh River, Edwards Dam; frogs, Clearfield, Lake Rowena on Howells Run, New Borough Dam, Slatelick Creek, Walters Dam on Beaverdam Run, Chest Creek, Shaft Dam, North Branch Little Conemaugh River, Edwards Dam; sunfish, Clearfield Creek, St. Francis Lake, Lake Rowena on Howells Run, New Borough Dam, Slatelick Creek, Walters Dam on Beaverdam Run, Chest Creek, Shaft Dam, North Branch Little Conemaugh River, Edwards Dam, Howe Run; yellow perch, Howe Run.

Cameron—trout, Sterling Run; catfish, Mix Run Pond, Bowers Pond, Devling Pond; frogs, Mix Run Pond, Bowers Pond, Devling Pond; sunfish, Mix Run, Bowers Pond, Devling Pond.

Carbon—black bass, Mahoning Creek; catfish, Lake Harmony, Lizard Creek, Tippet Swamp on Nesquehoning Creek, Mahoning Creek, Pohopoco Creek, Moses Wood Pond, Little Gap Ice Dam on Aquashicola Creek, Kittatinnny Pond; pickerel, Lake Harmony; sunfish, Lake Harmony, Lizard Creek, Tippet Swamp on Nesquehoning Creek, Mahoning Creek, Pohopoco Creek, Moses Wood

Pond, Mahoning Creek, Lake Harmony, Kittatinnny Pond, Little Gap Ice Dam on Aquashicola Creek.

Centre—black bass, Bald Eagle Creek; trout, Spring Creek, Penns Creek, Bald Eagle Creek, Hosler Dam on Half Moon Run; catfish, Cold Stream Dam; frogs, Cold Stream Dam; sunfish, Cold Stream Dam, Bald Eagle Creek.

Chester—catfish, Chester Creek, Darby Creek, Fricks Lock, Delchester Farms Dam on Indian Creek, Delchester Farms Dam on Ridley Creek, French Creek, Mill Pond on Schuylkill Canal, Black Dam on Pine Creek; sunfish, Black Dam on Pine Creek, Mill Pond on Schuylkill Canal, French Creek, Delchester Farms Dam on Ridley Creek, Delchester Farms Dam on Indian Creek, Fricks Lock, Chester Creek, Darby Creek; frogs, Fricks Lock, Chester Creek, Darby Creek, Delchester Farms, Dam on Indian Creek, Delchester Farms Dam on Ridley Creek, French Creek Mill Pond on Schuylkill Canal, Black Dam on Pine Creek; trout, Valley Creek.

Clarion—trout, Big Piney Creek; catfish, Licking Creek, Huefner Dam on Paint Creek; frogs, Licking Creek, Huefner Dam on Paint Creek; suckers, Red Bank Creek; sunfish, Licking Creek, Huefner Dam on Paint Creek, Red Bank Creek.

Clearfield—black bass, Sandy Lick Creek; trout, Lick Run, Little Clearfield Creek, Mosquito Creek; catfish, Helveta Dam, Sandy Lick Creek, Chest Creek, Kneedlers Dam, Beaver Run, Berwindale Lake, Little Clearfield Creek, Tannery Dam; frogs, Helveta Dam, Sandy Lick Creek, Chest Creek, Kneedlers Dam, Beaver Run, Berwindale Lake, Little Clearfield Creek, Tannery Dam; sunfish, Sandylick Creek, Helveta Dam, Chest Creek, Kneedlers Dam, Beaver Run, Berwindale Lake, Little Clearfield Creek, Tannery Dam.

Clinton—black bass, Bald Eagle Creek, Pine Creek; trout, Big Fishing Creek, Lick Run; catfish, Lick Run, West Branch Run, Bald Eagle Creek, Bald Eagle Canal; frogs, Bald Eagle Creek, Bald Eagle Canal; sunfish, Bald Eagle Creek, Bald Eagle Canal, Pine Creek.

Columbia—black bass, Fishing Creek; catfish, Roaring Creek, Fishing Creek, Green Creek, Huntingdon Creek, Little Fishing

Creek; sunfish, Roaring Creek, Fishing Creek, Green Creek, Huntingdon Creek, Little Fishing Creek.

Crawford—black bass, Conneaut Lake; catfish, Conneaut Lake, Crooked Creek, Oil Creek, French Creek, Conneaut Creek, Clear Lake, Lake Canadohta, Conneautte Creek, Cussewago Creek; frogs, Crooked Creek, Oil Creek, French Creek, Conneaut Creek, Clear Lake, Lake Canadohta, Conneautte Creek, Conneaut Lake, Cussewago Creek; sunfish, Oil Creek, Conneaut Lake, Crooked Creek, French Creek, Conneaut Creek, Clear Lake, Lake Canadohta, Conneautte Creek, Cussewago Creek.

Cumberland—black bass, Yellow Breeches Creek, Conodoguinet Creek; catfish, Conodoguinet Creek, Fuller Lake, Laurel Ore Pit, Henry Clay Ore Pit, Hairy Spring Run, Means Run, Carlisle Water House Dam on Conodoguinet Creek, Harrisburg Sportsmen's Pond No. 1, Harrisburg Sportsmen's Pond No. 2, Yellow Breeches Creek; frogs, Fuller Lake, Laurel Ore Pit, Henry Clay Ore Pit, Hairy Spring Run, Means Run, Carlisle Water House Dam on Conodoguinet Creek, Harrisburg Sportsmen's Pond No. 1, Harrisburg Sportsmen's Pond No. 2, Yellow Breeches Creek, Conodoguinet Creek, Fuller Lake, Laurel Ore Pit, Henry Clay Ore Pit, Hairy Spring Run, Means Run, Carlisle Water House Dam on Conodoguinet Creek, Harrisburg Sportsmen's Pond No. 1, Harrisburg Sportsmen's Pond No. 2; yellow perch, Mountain Creek.

Dauphin—trout, West Branch Rattling Creek, Manada Creek; catfish, Susquehanna River, Wildwood Lake, Manada Creek, Aberdeen Dam on Conewago Creek, Conewago Creek, Tresslers Dam on Stony Creek, Powells Creek, Pa. Canal Reservoir; sunfish, Wildwood Lake, Susquehanna River, Manada Creek, Swatara Creek, Penn Canal, Tresslers Dam on Stony Creek, Powells Creek, Aberdeen Dam on Conewago Creek, Conewago Creek; frogs, Manada Creek, Swatara Creek, Tresslers Dam on Stony Creek, Powells Creek, Aberdeen Dam on Conewago Creek, Conewago Creek, Susquehanna River, Wildwood Lake, Penna. Canal; yellow perch, Aberdeen Dam on Conewago Creek, Conewago Creek, Tresslers Dam on Stony Creek, Powells Creek, Wildwood Lake, Pa. Canal Reservoir.

Delaware—trout, Ridley Creek; catfish, Kaolin Quarry Hole, Ridley Creek, Crumlyne Lake on Little Crum Creek; sunfish, Kaolin Quarry Hole, Ridley Creek, Crumlyne Lake on Little Crum Creek; frogs, Ridley Creek, Kaolin Quarry Hole, Crumlyne Lake on Little Crum Creek.

Elk—trout, East Branch Millstone Creek, Big Mill Creek; catfish, Straight Creek Pond, Ridgway Water Works Reservoir; frogs, Straight Creek Pond, Ridgway Water Works Reservoir; sunfish, Straight Creek Pond, Ridgway Water Works Reservoir.

Erie—black bass, French Creek, Lake Erie; catfish, French Creek, Elk Creek, Lake Erie Bay, Conneaut Creek, Runion Creek, Miller Pond, Edinboro Lake, Lake LeBoeuf, West Branch French Creek, French Creek, Lake Pleasant; frogs, Elk Creek, Lake Erie Bay, Conneaut Creek, Runion Creek, Edinboro Lake, Lake LeBoeuf, West Branch French Creek, French Creek, Lake Pleasant; sunfish, French Creek, Elk Creek, Conneaut Creek, Runion Creek, Miller Pond, Edinboro Lake,

Lake LeBoeuf, West Branch French Creek, Lake Pleasant, Lake Erie Bay.

Fayette—sunfish, Upper Star Junction Dam on Washington Run, Lower Star Junction Dam on Washington Run, Smock Dam, Crabapple Dam, Dunbar Corp. Dam No. 1 on Dunbar Creek, Dunbar Corp. Dam No. 2 on Dunbar Creek, Brownfield Dam, Cool Springs Dam, Layton Reservoir.

Forest—black bass, Allegheny River; trout, Little Salmon Creek, Big Salmon Creek; yellow perch, Allegheny River.

Franklin—black bass, Conodoguinet Creek, Conococheague Creek; trout, Red Run; catfish, Muddy Run, Indian Lake, Conococheague Creek, Goods Dam on East Branch Little Antietam Creek, East Branch Little Antietam Creek, West Branch Conococheague Creek; frogs, Muddy Run, Indian Lake, Conococheague Creek, Goods Dam on East Branch Little Antietam Creek, East Branch Little Antietam Creek, West Branch Conococheague Creek; sunfish, Muddy Run, Indian Lake, Conococheague Creek, East Branch Little Antietam Creek, Goods Dam on East Branch Little Antietam Creek, West Branch Conococheague Creek, Conodoguinet Creek; suckers, Indian Lake.

Jefferson—black bass, Red Bank Creek, Little Sandy Creek; catfish, Red Bank Creek, Little Sandy Creek, Elnora Dam, Bath Pond, Falls Creek Borough Storage Dam, Reeds Dam; frogs, Elnora Dam, Little Sandy Creek, Bath Pond, Red Bank Creek, Falls Creek Borough Storage Dam, Reeds Dam; suckers, Red Bank Creek; sunfish, Elnora Dam on Bug Run, Falls Borough Storage Dam, Reeds Dam, Red Bank Creek, Little Sandy Creek, Bath Pond.

Juniata—black bass, Pomeroy Dam on Tuscarora Creek, Juniata River; catfish, Tuscarora Creek, Pomeroy Dam on Tuscarora Creek, Cocolamus Creek; frogs, Tuscarora Creek, Pomeroy Dam on Tuscarora Creek, Cocolamus Creek; sunfish, Tuscarora Creek, Pomeroy Dam on Tuscarora Creek, Cocolamus Creek, Juniata River.

Lackawanna—catfish, Mud Pond, Baylor Pond, Windfall Pond, Ford Pond, Handsome Lake, Whippoorwill Pond, Sicklers Pond, Sheridan Lake, Mountain Lake, Lower Klondyke Lake, West End Lake, Johnson Lake; minnows, Mountain Lake; sunfish, Mud Pond, Baylor Pond, Windfall Pond, Ford Pond, Handsome Lake, Whippoorwill Pond, Sicklers Pond, Sheridan Lake, Mountain Lake,



LITTLE LOYALSOCK CREEK, SULLIVAN COUNTY

Fulton—black bass, South Fork Ten Mile Creek, Dunkard Fork; catfish, South Fork Ten Mile Creek, Dunkard Fork Creek, Dunkard Creek, Browns Fork Creek, Penna. Fork, Whitley Creek, Wheeling Creek, North Fork Dunkard Fork Wheeling Creek, South Fork Wheeling Creek; frogs, Dunkard Creek, Browns Fork Creek, South Fork of Ten Mile Creek, Penna. Fork of Fish Creek, Whiteley Creek, Wheeling Creek, North Fork Dunkard Fork Wheeling Creek, South Fork Wheeling Creek; sunfish, Dunkard Creek, Browns Fork Creek, South Fork Ten Mile Creek, Penna. Fork, Whiteley Creek, Wheeling Creek, North Fork Dunkard Fork Wheeling Creek, South Fork Wheeling Creek.

Huntingdon—black bass, Raystown Branch Juniata River, Juniata River; trout, Licking Creek, Standing Stone Creek; catfish, Sideling Hill Creek, Aughwick Creek, Juniata River; frogs, Sideling Hill Creek, Aughwick Creek, Juniata River; sunfish, Raystown Branch Juniata River, Juniata River, Sideling Hill Creek, Aughwick Creek.

Indiana—black bass, Yellow Creek; trout, Yellow Creek; sunfish, Yellow Creek.

Lower Klondyke Lake, West End Lake, Johnson Lake, Neshannock Creek.

Lancaster—catfish, Hammer Creek, Octoraro Creek, Conowingo Dam, Big Chickies Creek, Middle Creek, Stovers Dam, Mill Creek, Little Conestoga Creek, Werners Dam, West Branch Octoraro Creek, Little Chickies Creek, Cocalico Creek, Muddy Creek, Pequa Creek, Conowingo Creek, Safe Harbor Dam; sunfish, Conowingo Dam, Safe Harbor Dam, Pequa Creek, Muddy Creek, Cocalico Creek, Little Chickies Creek, Conestoga Creek, Little Conestoga Creek, Octoraro Creek, West Branch Octoraro Creek, Mill Creek, Stovers Dam, Middle Creek, Hammer Creek, Big Chickies Creek, Wengers Mill Dam on Conestoga Creek; frogs, Big Chickies Creek, Hammer Creek, Middle Creek, Stovers Dam, Mill Creek, Octoraro Creek, West Branch Octoraro Creek, Wengers Mill Dam on Conestoga Creek, Conestoga Creek, Little Conestoga Creek, Little Chickies Creek, Cocalico Creek, Muddy Creek, Pequa Creek, Conowingo Creek; yellow perch, Pequa Creek, Muddy Creek, Cocalico Creek, Little Chickies Creek.

Lawrence—black bass, Neshannock Creek;

trout, Jameson or Elliott Run; catfish, Quarry Hole No. 5, Shenango River, Clarks Pond, Municipal Golf Course Pond, Hottenbaugh Creek, Neshannock Creek, Offutts Dam, North Fork Little Beaver River, Cement Dam on Big Run; frogs, Quarry Hole No. 5, Shenango River, Clarks Pond, Municipal Golf Course Pond, Hottenbaugh Creek, Neshannock Creek, Offutts Dam, North Fork Little Beaver River, Cement Dam on Big Run; sunfish, Quarry Hole No. 5, Neshannock Creek, Shenango River, Hottenbaugh Creek, Municipal Golf Course Pond, Clarks Pond.

Lebanon—catfish, Water Works Dam, Little Swatara Creek, Conewago Creek, Lights Dam, Stracks Dam, Stavers Dam, Swatara Creek, Strauss Dam; sunfish, Strauss Dam, Swatara Creek, Stavers Dam, Stracks Dam, Lights Dam, Water Works Dam, Little Swatara Creek, Conewago Creek; frogs, Conewago Creek, Little Swatara Creek, Water Works Dam, Stracks Dam, Lights Dam, Stavers Dam, Swatara Creek, Strauss Dam.

Lehigh—catfish, Ontelaunce Creek, Smoyer Milling Co. Dam, Orn Rod Mine Hole; sunfish, Smoyer Milling Co. Dam, Orn Rod Mine Hole, Ontelaunce Creek; frogs, Ornrod Mine Hole, Smoyer Milling Co. Dam, Ontelaunce Creek; yellow perch, Ontelaunce Creek.

Luzerne—black bass, North Branch Susquehanna River; trout, Bear Creek; catfish, North Branch Susquehanna River, Harveys Lake, Mud Pond, White Haven Dam on Lehigh River, Ice Lake, Penn Lake on Wrights Creek, Paper Mill Dam on Huntingdon Creek, Silver Lake, Mountain Spring Ice Co. Dam No. 1 on Bowmans Creek, North Pond, Grassy Pond, Nuangola Lake, Three Cornered Lake, Perrins Marsh, Beech Lake; sunfish, North Branch Susquehanna River, Harveys Lake, Mud Pond, Penn Lake on Wrights Creek, White Haven Dam on Lehigh River, Ice Lake, Paper Mill Dam on Huntingdon Creek, Silver Lake on Huntingdon Creek, Mountain Spring Ice Co. Dam No. 1 on Bowmans Creek, North Pond, Grassy Pond, Nuangola Lake, Three Cornered Lake, Beech Lake, Perrins Marsh.

Lycoming—black bass, Loyalsock Creek, Muncy Creek, Lycoming Creek; trout, Lycoming Creek, Slate Run, Rock Run; catfish, Muncy Creek, Loyalsock Creek, Little Muncy Creek, Mill Creek; frogs, Mill Creek, Loyalsock Creek, Lycoming Creek, Muncy Creek, Little Muncy Creek; minnows, Highland Lake; sunfish, Muncy Creek, Little Muncy Creek, Lycoming Creek, Mill Creek, Loyalsock Creek.

McKean—catfish, Mellander Pond; frogs, Mellander Pond; sunfish, Mellander Pond, Kushequa Pond; trout, Chappell Fork.

Mercer—black bass, Little Shenango River; trout, Lackawannock Creek, Deer Creek, Swamp Run; catfish, Little Shenango River, Wolf Creek, Tingley Dam No. 1, Tingley Dam No. 2, Shenango River, Furnace Pond, Otter Creek, Sandy Creek, Cool Spring Creek, Pymatuning Creek; frogs, Little Shenango River, Wolf Creek, Tingley Dam No. 1, Tingley Dam No. 2, Shenango River, Furnace Pond, Otter Creek, Sandy Creek, Cool Spring Creek, Pymatuning Creek; sunfish, Tingley Dam No. 1, Tingley Dam No. 2, Shenango River, Furnace Pond, Otter Creek, Sandy Creek, Cool Spring Creek, Pymatuning Creek, Shenango River, Little Shenango River, Wolf Creek.



SHELDON HOFFMAN, BELLEFONTE, EXHIBITS A 19½ INCH BROWNIE TAKEN ON A DRY FLY IN BALD EAGLE CREEK

Mifflin—black bass, Juniata Country Club Dam on Juniata River, Juniata River; trout, Kishacoquillas Creek; catfish, Juniata Country Club Dam on Juniata River, Juniata River; frogs, Juniata Country Club Dam on Juniata River, Juniata River; sunfish, Juniata River, Juniata Country Club Dam on Juniata River.

Monroe—black bass, Delaware River; trout, Pocono Creek, Paradise Creek; catfish, Delaware River, A. L. Rakes Dam, Echo Lake, Arlington Lake, Little Saylor Lake, Echo Lake, Weir Lake, Youngs Pond, Long Pond, Mountain Ice Company Dam No. 1, Pocono Summit Lake, Deep Lake, Hawk-eye Pond, Gilmer Swamp Run, Leavitts Branch, Goose Pond Run; minnows, Deep Lake, Hawk-eye Pond; sunfish, Delaware River, A. L. Rakes Dam, Echo Lake, Arlington Lake, Little Saylor Lake, Weir Lake, Echo Lake, Youngs Pond, Long Pond, Pocono Summit Lake, Mountain Ice Co. Dam No. 1, Deep Lake, Hawk-eye Pond.

Montgomery—catfish, Perkiomen Creek, Manatawney Creek, Gulf Mill Creek; sunfish, Perkiomen Creek, Manatawney Creek, Gulf Mill Creek; frogs, Manatawney Creek, Perkiomen Creek, Gulf Mill Creek.

Montour—black bass, Chillisquaque Creek; catfish, Chillisquaque Creek; Mahoning Creek; sunfish, Chillisquaque Creek; yellow perch, Mahoning Creek.

Northampton—black bass, Delaware River; catfish, Delaware River, Bowers Dam on Bushkill Creek, Paint Mill Dam on Monocacy Creek; sunfish, Bowers Dam on Bushkill Creek, Paint Mill Dam on Monocacy Creek, Delaware River; frogs, Delaware River, Bowers Dam on Bushkill Creek, Paint Mill Dam on Monocacy Creek.

Perry—black bass, Juniata River, Buffalo Creek, Shermans Creek; catfish, Juniata River, Buffalo Creek, Cocolamus Creek, Little Buffalo Creek, Shermans Creek; frogs, Cocolamus Creek, Buffalo Creek, Little Buffalo Creek, Juniata River, Shermans Creek; sunfish, Cocolamus Creek, Buffalo Creek, Little Buffalo Creek, Juniata River, Shermans Creek (Loysville Hydro-Electric Dam).

Pike—black bass, Delaware River; catfish, Promise Land Pond, Delaware River, Pecks Pond, Twin Lakes, Mud Pond, Big Walker Lake, Fairview Lake, Elicks Pond, Greeley

Lake, Westcolang Lake, Lower Shohola Falls Dam, Bruce Lake, Taminent Lake, Forest Lake, Sawkill Pond, Big Tink Lake, View Lake, Welcome Lake, White Deer Lake, Little Mud Pond, Lake Minisink, Lake Wallenpaupack; minnows, Big Tink Pond; pickerel, Promise Land Pond, Pecks Pond; sunfish, Promise Land Pond, Delaware River, Pecks Pond, Big Walker Lake, Mud Pond, Twin Lakes, Elicks Pond, Fairview Lake, Greeley Lake, Westcolang Lake, Lower Shohola Falls Dam, Bruce Lake, Taminent Lake, Forest Lake, Sawkill Pond, Lake Minisink, Little Mud Pond, White Deer Lake, Big Tink Lake, View Lake, Welcome Lake, Lake Wallenpaupack; yellow perch, Twin Lakes, Elicks Pond, Lower Shohola Falls Dam.

Potter—trout, Lyman Run, West Branch Pine Creek, Allegheny River; catfish, sunfish and frogs, Rose Lake.

Schuylkill—trout, Bear Creek, Locust Creek; catfish, Cats Pond, Slack Pond, Suckers Pond, Mahoning Creek, Lizard Creek, Pattersons Dam No. 1, Pattersons Dam No. 2, Pattersons Dam No. 3, Old Union Canal, Deep Creek, Long Run, Old Union Canal Basin, Mahantango Creek, Pine Creek, Hosensock Creek, Dock Pond, Deer Lake Dam on Pine Creek, Cumbola Dam on Schuylkill River, Sweet Arrow Lake on Little Swatara Creek; sunfish, Dock Pond, Deer Lake Dam on Pine Creek, Mahoning Creek, Hosensock Creek, Pine Creek, Mahantango Creek, Old Schuylkill Canal Basin, Long Run, Deep Creek, Sweet Arrow Lake on Little Swatara Creek, Old Union Canal, Pattersons Dam No. 1, Pattersons Dam No. 2, Pattersons Dam No. 3, Lizard Creek, Cats Pond, Suckers Pond, Black Pond, Cumbola Dam on Old Schuylkill Canal; frogs, Lizard Creek, Sweet Arrow Lake on Little Swatara Creek, Pattersons Dam No. 1, Pattersons Dam No. 2, Pattersons Dam No. 3, Suckers Pond, Old Union Canal, Black Pond, Cats Pond, Deep Creek, Long Run, Old Schuylkill Canal Basin, Mahantango Creek, Pine Creek, Hosensock Creek, Cumbola Dam on Old Schuylkill Canal, Mahoning Creek, Dock Pond, Deer Lake Dam on Pine Creek, Little Swatara Creek; yellow perch, Hosensock Creek, Cumbola Dam on Old Schuylkill Canal, Mahoning Creek, Deer Lake Dam on Pine Creek, Dock Pond.

Snyder—black bass, Middle Creek; catfish, Middle Creek, North Branch Middle Creek, Freeburg Fire Pond No. 1, Freeburg Fire Pond No. 2, Penns Creek; sunfish, Middle Creek, North Branch Middle Creek, Freeburg Fire Pond No. 1, Freeburg Fire Pond No. 2, Penns Creek.

Somerset—black bass, Youghiogheny River; trout, Flaugherty Creek, Laurel Hill Creek, Whites Creek, Clear Shard Creek; catfish, Youghiogheny River, Middle Creek, Rowena Lake, Bigby Creek, McDonaldson Bros. Valley Coal Co. Dam, Kimberly Run, West Branch Coxes Creek; frogs, Youghiogheny River, Middle Creek, Rowena Lake, Bigby Creek, McDonaldson Bros. Valley Coal Co. Dam, Kimberly Run, West Branch of Coxes Creek; sunfish, Youghiogheny River, Middle Creek, Rowena Lake, Bigby Creek, McDonaldson Bros. Valley Coal Co. Dam, Kimberly Run, West Branch Coxes Creek; suckers, Lake Rowena.

Sullivan—trout, West Branch Fishing Creek, Loyalsock Creek; catfish, Little Loyalsock Creek, Marsh Creek, Little Lick Creek,

Painters Den Pond, Eagles Mere Lake, Hunters Lake, Splash Dam on Mehoopany Creek, Mud Lake, Williams Lake, Elk Lake; sunfish, Painters Den Pond, Eagles Mere Lake, Hunter Lake, Splash Dam on Mehoopany Creek, Mud Lake, Williams Lake, Elk Lake; yellow perch, Painters Den Pond.

Susquehanna—black bass, North Branch Susquehanna River; catfish, Laurel Lake, North Branch Susquehanna River, Round Pond, Forest Lake, Lowe Lake, Comfort Pond, Upper Lake, Lower Lake, Middle Lake, Tingley Lake, Tyler Lake, Beaver Pond, Pages Pond, Quaker Lake, Card Pond, Lords Pond, Lakeside Pond, Ely Lake, Jones Lake, Heart Lake, Tuscarora Lake, East Lake, Butler Lake, Laurel Lake, Quaker Lake, Schoolys Pond, States Pond; minnows, Quaker Lake, Tuscarora Lake, Laurel Lake; pickerel, Laurel Lake, Round Pond, Quaker Lake; sunfish, Laurel Lake, North Branch Susquehanna River, Round Pond, Forest Lake, Lowe Lake, Lewis Lake, Comfort Pond, Upper Lake, Lower Lake, Middle Lake, Tingley Lake, Tyler Lake, Beaver Pond, Pages Pond, Quaker Lake, Card Pond, Lords Pond, Lakeside Pond, Ely Lake, Jones Lake, Heart Lake, Tuscarora Lake, East Lake, Butler Lake, Schoolys Pond, States Pond.

Union—black bass, Buffalo Creek, Penns Creek; trout, Block Run, Buffalo Creek, White Deer Creek, Buffalo Creek, Penns Creek, Millmont Dam on Penns Creek, New Berlin Dam on Penns Creek, Little Buffalo Creek, White Deer Hole Creek, Turtle Creek; minnows, Turtle Creek, White Deer Hole Creek; sunfish, Buffalo Creek, Penns Creek, New Berlin Dam on Penns Creek, Millmont Dam on Penns Creek, Little Buffalo Creek, White Deer Hole Creek, Turtle Creek.

Venango—catfish, Lake Creek, Polk Sanitarium Dam, French Creek, Allegheny River; frogs, Lake Creek, Polk State Sanitarium Dam, French Creek, Allegheny River; sunfish, French Creek, Allegheny River, Lake Creek, Polk State Sanitarium Dam.

Warren—black bass, Conewango Creek, Allegheny River; catfish, Allegheny River, Columbus Pond, North Warren Dam, Brokenstraw Creek; frogs, Columbus Pond, North Warren Dam on Conewango Creek, Allegheny River, Brokenstraw Creek; sunfish, Columbus Pond, Bear Lake, North Warren Dam, Allegheny River, Brokenstraw Creek, Conewango Creek.

Washington—black bass, Cross Creek, Buffalo Creek; catfish, Kings Creek, Aunt Clara Fork, Laughlooth Mill Dam, Krewers Dam, Harmony Coal Co. Dam, Rankin Run, Little Ten Mile Creek, Ten Mile Creek, Little Chartiers Creek; frogs, Kings Creek, Aunt Clara Fork, Laughlooth Mill Dam, Krewers Dam, Harmony Coal Co. Dam, Rankin Run, Little Ten Mile Creek, Ten Mile Creek, Little Chartiers Creek; sunfish, Cross Creek, Buffalo Creek, Kings Creek, Aunt Clara Fork, Laughlooth Mill Dam, Krewers Dam, Harmony Coal Company Dam, Rankin Run, Little Ten Mile Creek, Ten Mile Creek, Little Chartiers Creek.

Wayne—catfish, Island Lake, Shehawken Lake, Coxton Lake, Duck Harbor Lake, Seelyville Pond, Lake Como, Snag Pond, Ice Pond, North Jersey Lake, Kizers Pond on Middle Creek, Elk Lake, Beech Lake, Bunnells Pond, Sly Lake, Starlight Lake, Fourmile Pond, Coxton Lake, Independent Lake, Poyntelle Lake, Bone Lake; minnows, Coxton Lake; pickerel, Island Lake, Shehawken

Lake, Coxton Lake, Duck Harbor Lake; sunfish, Shehawken Lake, Island Lake; Coxton Lake, Duck Harbor Lake, Seelyville Pond, Lake Como, Snag Pond, Ice Pond, North Jersey Lake, Kizers Pond on Middle Creek, Elk Lake, Beech Lake, Bunnells Pond, Sly Lake, Starlight Lake, Fourmile Pond, Independent Lake, Poyntelle Lake, Bone Lake.

Westmoreland—trout, Lynn Run; catfish, Margarete Reservoir, Mammoth Dam, Carpenterstown Dam No. 1 on Boyer Run, Carpenterstown Dam No. 2 on Boyer Run; frogs, Margarete Reservoir, Mammoth Dam, Carpenterstown Dam No. 1 on Boyer Run, Carpenterstown Dam No. 2 on Boyer Run; sunfish, Margarete Reservoir, Mammoth Dam, Carpenterstown Dam No. 1 on Boyer Run, Carpenterstown Dam No. 2 on Boyer Run.

Wyoming—black bass, North Branch Susquehanna River; catfish, Carley Lake, Mud Pond, North Branch Susquehanna River, Nigger Pond, Chamberlin Pond, Winola Lake, Edinger Pond; minnows, North Branch Susquehanna River; sunfish, Carley Lake, Mud Pond, North Branch Susquehanna River, Nigger Pond, Chamberlin Road, Winola Lake, Edinger Pond.

York—catfish, North Branch Bermudian Creek, West Branch Codorus Creek, Wrightsville Quarry Hole, Broad Water Lake, Conewago Creek, Feiglers Ore Hole, Dunkard Valley Ore Hole, South Branch Codorus Creek, Silver Lake, on Bennetts Run, Bermudian Creek, Little Conewago Creek; sunfish, Silver Lake on Bennetts Run, Bermudian Creek, Kohlers Mill Dam, South Branch Codorus Creek, Conowingo Creek, North Branch Bermudian Creek, West Branch Codorus Creek, Conewago Creek, Little Conewago Creek, Feiglers Ore Hole, Dunkard Valley Ore Hole; frogs, Conewago Creek, Silver Lake on Bennetts Run, Bermudian Creek, South Branch Codorus Creek, West Branch Codorus Creek, Kohlers Mill Dam, Feiglers Ore Hole, Dunkard Valley Ore Hole,



WALLENPAUPACK PICKEREL

North Branch Bermudian Creek, Little Conewago Creek; yellow perch, East Branch Codorus Creek, West Branch Codorus Creek.

A muskellunge weighing 100 pounds was the largest known to be taken on hook and line, report has it.

THE ANGLER FOR CHRISTMAS

PENNSYLVANIA ANGLER is just what its name indicates—a magazine devoted to fish conservation and fishing in Pennsylvania. Each month it brings to its readers happenings on the streams and lakes in their home state, articles concerning the art of fishing and the various species of fish inhabiting our inland waters, and reports on hatchery activities. Most important of all, it advocates conservation, the saving of this fine sport of angling for future generations.

By way of suggestion, the ANGLER as a Christmas gift will keep one who receives it in touch with fishing in the Keystone State during 1935.

BOARD OF FISH COMMISSIONERS

HARRISBURG, PA.

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HERE ^A_N^D THERE IN ANGLERDOM



A report has just reached the ANGLER from Warden Link Lender, of Bellwood, Blair County, that a bass taken on the Juniata River, at Petersburg during the past season, measured 26½ inches in length and weighed 8½ pounds, tying the record largemouth caught in Harvey's Lake by John Warzechowski of Nanticoke. It was landed by Charles Patterson, of Johnstown.

Fishing is a favorite pastime with William B. Newman, of Waterfall, according to Warden Link Lender. Recently, Lender met Newman, who is 36, while he was fishing in the Juniata with his father and two brothers. Totally blind, he still derives pleasure from the sport. According to Lender, when Newman was six years old, he and another boy were digging fishing bait, and he lost the sight in one eye when struck by the pick being used. When 12 years old, he lost the sight in the other eye, but the call of fishing waters still is as strong as ever.

Charles Patterson, of Johnstown, whose big bass tied the season record, made a number of other good catches in the Juniata this year. An autumn catch consisted of five smallmouth bass from 10 to 14 inches in length and a wall-eyed pike measuring 18 inches.

Late October fishing in the Raystown Branch of the Juniata yielded two big wall-eyed pike to George Dewey, of Williamsburg, one of the most expert fishermen in central Pennsylvania. His catch consisted of two pike, sometimes called Susquehanna salmon, one measuring 24½ inches and weighing 4 pounds 7 ounces, the other, 25 inches and weighing 5 pounds.

A carp-fishing record to shoot at is that of D. F. Appleman, known to his many friends as "Appie," of Williamsburg. According to Warden Link Lender, of Bellwood, "Appie" caught 171 carp from the Frankstown Branch of the Juniata during 1933. The fish had a total weight of 850 pounds. The Williamsburg fisherman, who is 74 years old, pins his faith on small pieces of potatoes as bait.

The Upper Delaware River, writes Warden Frank Brink, of Milford, furnished its usual great wall-eyed pike fishing this autumn. Jay Kintner, of Dingman's Ferry, landed a whopper weighing 9½ pounds. Eight pike, each weighing over 6 pounds, and one weighing 5 pounds were taken in a day's fishing by Everett Leicht, Milford guide. Levi Jagger of Dingman's Ferry made a big catch on October 26th.

From Warden Myron Shoemaker, of Laceyville, comes word that autumn fishing on the



WILFORD ROBINSON, AMBLER, AND HERB PHILLIPS, MANOA, AND THEIR CATCH OF WALLENPAUPACK PIKE AND BASS. LARGEST PIKE, LENGTH 25 INCHES, WEIGHT 5¾ POUNDS

famous North Branch of the Susquehanna was at its best this year. In five days' fishing, Fay Refenbury, of Laceyville, caught 10 bass each day. On Tuesday, he landed one bass weighing 3¾ pounds and measuring 19¼ inches; and on Wednesday, an 18-inch smallmouth weighing 3 pounds. Charles Cox of Towanda caught a 3-pound smallmouth and 6-pound pike on flies. Grover Marcey, of Towanda, caught a 3¾-pound smallmouth on flies. Plug-fishing, Cecil Smith, of Sayre, caught some fine bass. One 19 inches topped his catches, one measured 17 inches, two 13¼ inches and one 13 inches.

One of those big bass of the Brandywine Creek considerably upset Fisherman Kunkle recently, according to Warden Del Broadbelt, of Pocopson. It seems that Kunkle was still fishing and suddenly had the satisfaction of seeing the cork on his line disappear below

the surface. He hooked the fish, a large redfin, and was permitting it to play about the surface of the water before pulling it. Suddenly a whopper of a bass decided that the redfin would make a good meal and struck savagely. This unusual turn of events so surprised Kunkle that he pulled too quickly and the bass stripped the minnow from the hook.

Clyde Carlton, of the *Canonsburg Daily Notes* recently sent us a report of a big bass caught by Frank Norwood, of Canonsburg. When Frank caught a five-pound bass this autumn in the Citizens Water Company dam, it was generally believed that the big fish would top catches made in that section of the state. A short time later, however, Tom Hirst, Jr., proved that old adage about "bigger fish in the water than ever were caught" by landing an old-timer of the bass class weighing 5½ pounds. And they're real bass in any company.

Pine Creek smallmouth bass were striking well in September, according to Warden Howard Boyden, of Wellsboro. L. F. Brown, of Wellsboro, caught a bass measuring 17 inches, using crawfish for bait. On September 21st, Angelo Bloise, of Wellsboro, landed 8 nice bass ranging in size from 10 to 18 inches during two hours' fishing.

Warden D. K. Broadbelt reports that covering the period from October 1st to 15th, Sam Entreckin, of West Chester, caught eight fine bass of the smallmouth variety from the Brinton Quarry hole. The fish, ranging in size from 15 to 18 inches, were taken on minnows.

Rapid-Fire Catches

When the great North Branch of the Susquehanna is right, the bait is right, and you happen into a school of those battling smallmouth bass for which this stream is famous—well, chances are you'll have the kind of action described in a recent letter from Warden Myron Shoemaker of Laceyville.

Stanley Aston and Charles Welteroth, Kingston anglers, made a great catch one day in October, according to Myron. In rapid-fire order they creeled four big bass on helgramites, 15 inches, 16 inches, 18 inches and 19 inches respectively. The largest bass weighed 3½ pounds.



Our Laurel Lake Meetin'

By CLARENCE A. HAMMOND

Laurel Lake has got a fish club,
Or some such sort of crowd.
Don't know the right name for it,
But I'm a member and I'm proud.

Cause the aim as I can see it,
Is to make a guy play fair
With the State of Pennsylvanny
Who stocks the waters there.

We don't stand for ary fish hog,
"Gosh, I sure do hate that name
An I hope we'll all be sportsmen
Who will fairly play the game.

Our fishin's gettin poorly
Been right ailin for a spell,
So we called in Doctor Buller
To make the patient well.

So the President called a meetin
Of every go'l darn fishin man,
While Buller told fish history
From fish eggs to the pan.

A feller there knowed more than Doc.
An tried to stick him for the crowd,
But Doc just laffed & showed him up
An never raised his voice up loud.

"Why soft clams die an raise on top?
Now tell us that, it's our wish?"
You ask the clam man Doc replied
"I'm spending all my time on fish!"

Doc he stated way back yonder
While the red man had his play,
The Almighty stocked the waters
In his own unerring way.

Placed the fish an all the foods
Balanced up the different breeds
Foods for all the times & seasons
To supply their native needs.

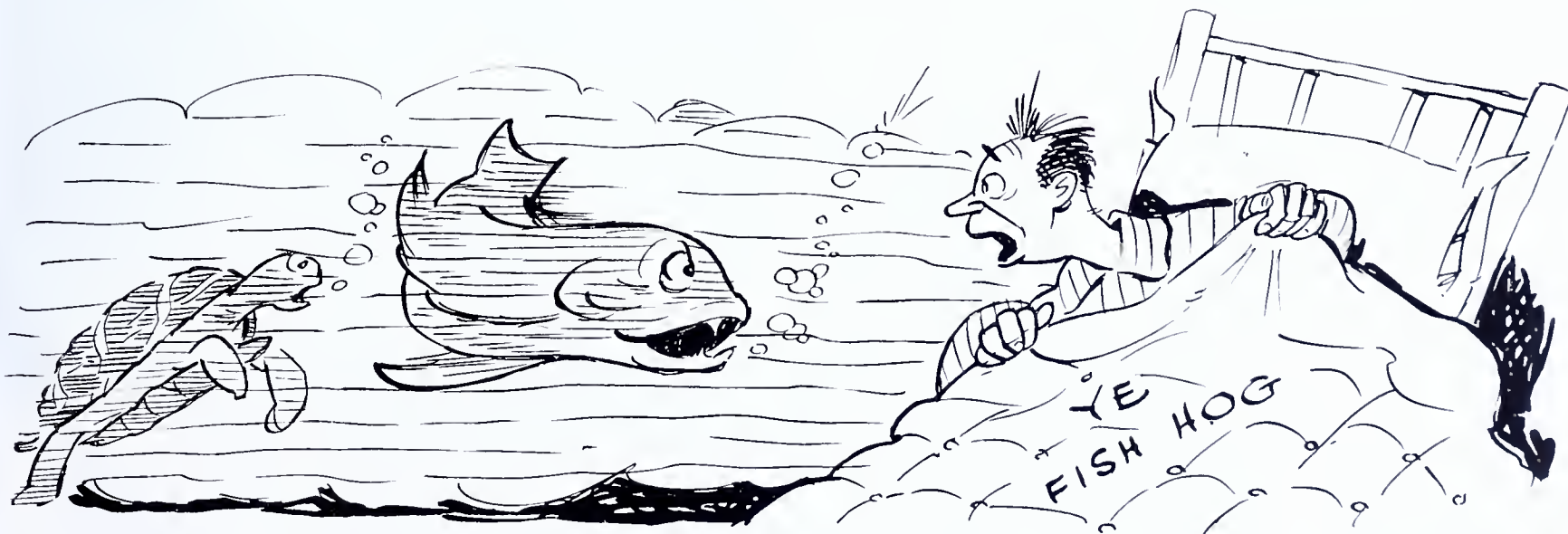
Then the white man in his wisdom,
And his travels found a dish,
That appealed unto his likin
Then his pond held foreign fish.

This upshot the whole darn balance
Took the Lord so long to build,
And the fishin gettin poorer
Fishbags now can't half be filled.

Now we back track on the matter
Stock the pond in nature's way,
Then get shet of all the fish hog
So, good fishius come to stay.

Was I a fish and herd Doc Buller
Scairt of him I sure would be,
For he'd know what I'd be doin
Just about as quick as me.

Fishin groups now do your duty,
Take a trip to Pleasant Mount.
See this fish man and his fishes
Tips he gives you SURE DO COUNT.



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